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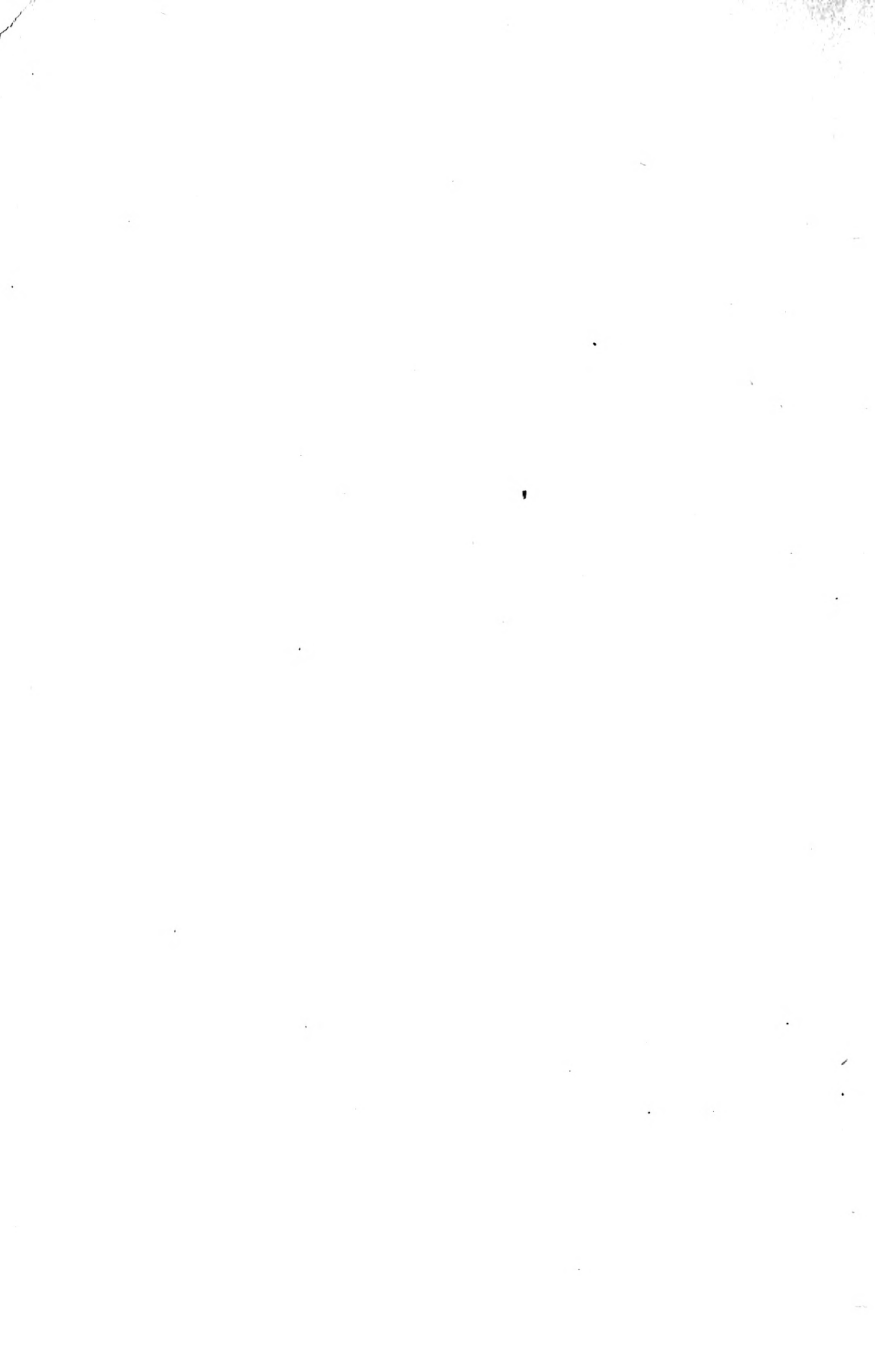
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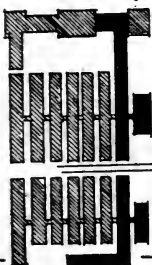
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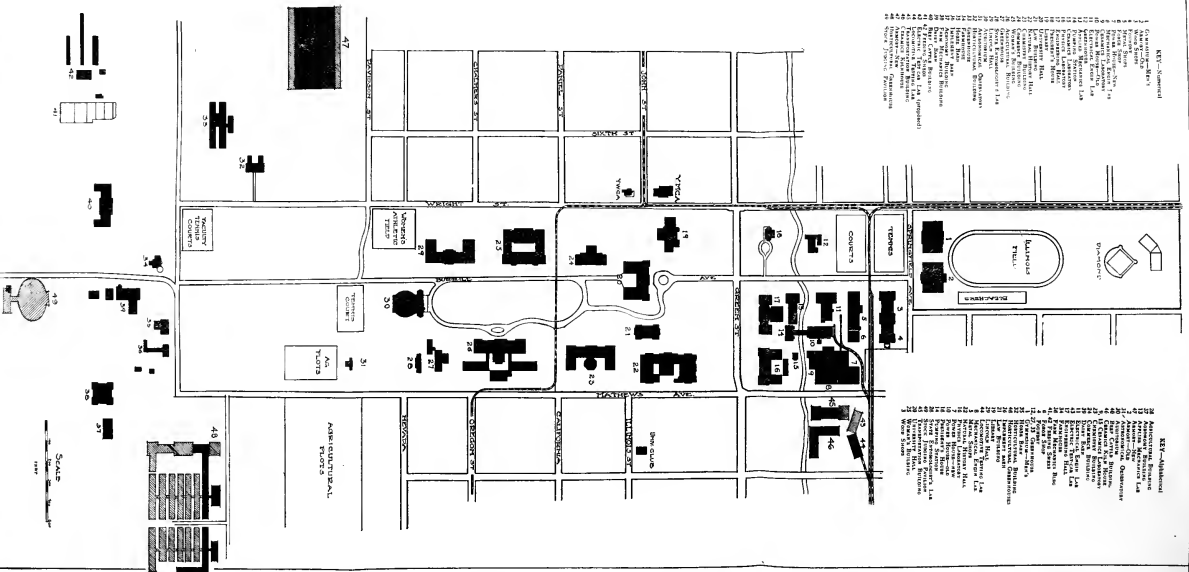
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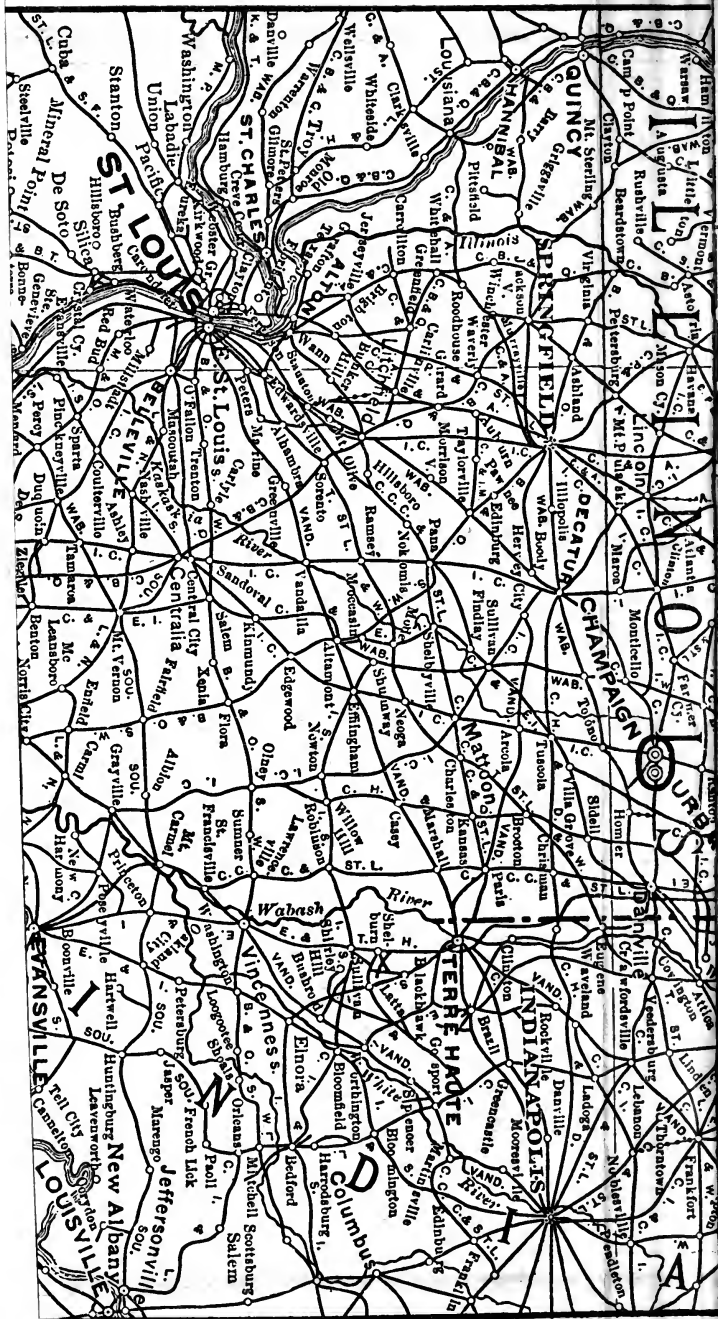


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Learning and Labor

# University of Illinois

## ANNUAL REGISTER

1912-1913

General Announcements, 1913-1914

Faculty and Courses, 1912-1913

Students, 1912-1913

URBANA-CHAMPAIGN  
PUBLISHED BY THE UNIVERSITY  
1913

FLANIGAN-PEARSON CO.  
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CHAMPAIGN, ILLINOIS





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# CALENDAR 1912, 1913, 1914

1912							1913							1914						
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# THE UNIVERSITY CALENDAR

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1912-1913-1914

## FIRST SEMESTER, 1912-1913

Sept. 10, Tues.	Quarterly meeting of the Board of Trustees
Sept. 11-14, Wed. to Sat.	Entrance examinations
Sept. 16, 17, Mon., Tues.	Registration days
Sept. 18, Wed., 8 a. m.	Instruction begun
4 p. m.	Freshman convocation
Oct. 7, Mon., 4 p. m.	Senate Meeting
Nov. 4, Mon., 5 p. m.	Latest day for announcement of subjects for all undergraduate and graduate theses
Nov. 21-23, Thurs. to Sat.	High school conference
Nov. 27, Wed., 12 m.	Thanksgiving recess begun
Dec. 2, Mon.	Illinois Day
12 m.	Instruction resumed
4 p. m.	Senate meeting
Dec. 10, Tues.	Quarterly meeting of the Board of Trustees
Dec. 13, Fri.	Junior promenade
Dec. 17, Tues.	Christmas concert
Dec. 21, Sat., 12 m.	Holiday recess begun
Dec. 31, Tues., 5 p. m.	Latest day for submission of outlines of theses by candidates for professional degrees in engineering
1913	
Jan. 6, Mon., 12 m.	Instruction resumed
Jan. 23, Thurs.	Semester examinations begun
Jan. 30, Thurs.	End of first semester
Jan. 31, Fri.	Annual sophomore cotillion

## SECOND SEMESTER, 1912-1913

Feb. 3, 4, Mon., Tues.	Registration days
Feb. 3, Mon., 4 p. m.	Senate meeting
Feb. 5, Wed., 8 a. m.	Instruction begun
Feb. 12, Wed.	Lincoln Day
Feb. 21, Fri.	Annual military ball
March 1, Sat.	Annual band concert
March 2, Sun.	University Day
March 11, Tues.	Annual meeting of the Board of Trustees
March 20, Thurs., 12 m.	Easter recess begun
March 25, Tues., 12 m.	Instruction resumed
April 1, Tues., 5 p. m.	Latest day for filing of completed theses by candidates for professional degrees in engineering
• April 7, Mon., 4 p. m.	Senate meeting
May 16, Fri., evening	Interscholastic oratorical contest
May 15-17, Thurs. to Sat.	Public school art exhibit
May 17, Sat.	Interscholastic athletic meet
5 p. m.	Latest day for receipt by the Dean of the Graduate School of certified copies of doctors' theses
May, between 15 and 31	{ Hazelton prize drill
	{ Annual inspection
	{ Company competitive drill
May 29, Thurs.	Semester examinations begun
May 30, Fri.	Military Day
June 5, Thurs.	Semester examinations ended
June 7, Sat., 12 m.	Latest day for acceptance of undergraduate theses
	Latest day for receipt by the Dean of the Graduate School of certified copies of masters' theses
June 8, Sun.	Baccalaureate address
June 9, Mon.	Class Day
	Senior ball
June 10, Tues.	Alumni Day
	Quarterly meeting of the Board of Trustees
June 11, Wed.	Forty-second Annual Commencement

## SUMMER SESSION, 1913

June 16, Mon.	Registration day
June 17, Tues.	Instruction begun
June 28, July 5, 12, 19, 26	Entrance examinations
Aug. 7, 8, Thurs., Fri.	Final examinations

## FIRST SEMESTER, 1913-1914

Sept. 9, Tues.	Quarterly meeting of the Board of Trustees
Sept. 15-18, Mon. to Thurs.	Entrance examinations
Sept. 22, 23, Mon., Tues.	Registration days
Sept. 24, Wed., 8 a. m.	Instruction begun
4 p. m.	Freshman convocation
Oct. 6, Mon., 4 p. m.	Senate meeting
Nov. 3, Mon., 5 p. m.	Latest day for announcement of subjects for all undergraduate and graduate theses
Nov. 20-22, Thurs. to Sat.	High School conference
Nov. 26, Wed., 12 m.	Thanksgiving recess begun
Dec. 1, Mon., 12 m.	Instruction resumed
4 p. m.	Senate meeting
Dec. 2, Tues.	Illinois Day
Dec. 9, Tues.	Quarterly meeting of the Board of Trustees
Dec. 12, Fri.	Junior promenade
Dec. 16, Tues.	Christmas concert
Dec. 19, Fri., 5 p. m.	Holiday recess begun
Dec. 31, Wed., 5 p. m.	Latest day for submission of outlines of theses by candidates for professional degrees in engineering

## 1914

Jan. 5, Mon., 12 m.	Instruction resumed
Jan. 29, Thurs.	Semester examinations begun
Feb. 2, Mon., 4 p. m.	Senate meeting
Feb. 5, Thurs.	End of first semester
Feb. 6, Fri.	Annual sophomore cotillion

## SECOND SEMESTER, 1913-1914

Feb. 9, 10, Mon., Tues.	Registration days
Feb. 11, Wed., 8 a. m.	Instruction begun
Feb. 12, Thurs.	Lincoln Day
Feb. 20, Fri.	Annual military ball
March 2, Mon.	University Day
March 7, Sat.	Annual band concert
March 10, Tues.	Annual meeting of the Board of Trustees
April 6, Mon., 4 p. m.	Senate meeting
5 p. m.	Latest day for filing of completed theses by candidates for professional degrees in engineering
April 9, Thurs., 12 m.	Easter recess begun
April 14, Tues., 12 m.	Instruction resumed
May 15, Fri., evening	Interscholastic oratorical contest
May 14-16, Thurs. to Sat.	Public school art exhibit
May 16, Sat.	Interscholastic athletic meet
5 p. m.	Latest day for receipt by the Dean of the Graduate School of certified copies of doctors' theses
May, between 15 and 31	Hazelton prize drill
	Annual inspection
May 30, Sat.	Company competitive drill
June 4, Thurs.	Military Day
June 6, Sat., 12 m.	Semester examinations begun
	Latest day for acceptance of undergraduate theses
	Latest day for receipt by the Dean of the Graduate School of certified copies of masters' theses
June 9, Tues.	Quarterly meeting of the Board of Trustees
June 11, Thurs.	Semester examinations ended
June 14, Sun.	Baccalaureate address
June 15, Mon.	Class Day
	Senior ball
June 16, Tues.	Alumni Day
June 17, Wed.	Forty-third Annual Commencement

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*Committee on Library*—Professor Daniels, chairman; Professor Blair, Professor Carman, Professor Goebel, Professor Sherman, Mr. Windsor, Assistant Professor Washburn.

*Committee on Educational Policy*—Professor Forbes, chairman; Professor Mumford, Professor Noyes, Professor Berg, Professor Ford, Dean Kinley (*ex officio*).

*Committee on Athletics*—Professor Parr, chairman; Professor Goodenough, Dean Clark, Professor White, Major Morse.

## COMMITTEES OF THE COUNCIL OF ADMINISTRATION

*Committee on Attendance for Men*—Professor Pease, chairman; Assistant Dean Warnock, Mr. Noerenberg, Dr. Börger, Assistant Professor Coffey.

*Committee on Attendance for Women*—Assistant Professor Goldthwaite, chairman; Acting Dean Fawcett (secretary), Assistant Professor Simpson.

*Committee on Discipline for Men*—Dean Clark, chairman (*ex officio*); Professor Barton, Professor Richards, Assistant Professor Rankin, Professor Decker, Dr. Lytle.

*Committee on Discipline for Women*—Acting Dean Fawcett, chairman (*ex officio*); Miss Blaisdell, Miss Jones.

*Committee on Student Organizations and Activities*—Assistant Professor Watson, chairman; Dean Clark, Acting Dean Fawcett, Professor Lloyd, Assistant Professor Schwartz.

*Committee on Student Publications*—Assistant Professor Scott, chairman; Professor L. H. Smith, Assistant Professor Dufour.

*Auditing Committee for Student Organizations and Publications*—Assistant Dean Warnock, chairman; Assistant Professor Paul, Mr. Noerenberg.

*Committee on Students' Progress*—Dean Clark, chairman; Acting Dean Fawcett, Assistant Dean Meyer, Associate Professor Rietz, Assistant Dean Miller, Assistant Professor Rankin, Professor Vernier.

*Loan Fund Committee*—Dean Clark, chairman; Assistant Dean Meyer, Assistant Dean Miller.

*Committee on the Hospital Association*—Dean Clark, chairman; Acting Dean Fawcett, Assistant Dean Miller.

*Committee on Transfer of Credits*—Professor Pettit, chairman; Assistant Professor Hollister, Assistant Professor Leutwiler, Dr. Seymour, Dr. Crathorne, Mr. McConn, secretary (*ex officio*).

*Committee on Accredited Schools*—Professor Bagley, chairman; Assistant Professor Hollister, Associate Professor Bayley, Assistant Professor Paul, Assistant Dean Miller, Mr. McConn.

*Committee on Appointment of Graduates*—Professor Bagley, chairman; Assistant Professor Hollister, Associate Professor Larson, Associate Professor Frank Smith.

*Committee on Catalog*—Professor Ward, chairman; Professor Carman, Professor Alden.

**PART I**  
**GENERAL INFORMATION**



## LOCATION

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The University of Illinois is situated in Champaign County, about fifty miles northeast of the geographical center of the State. It is 128 miles south of Chicago, 118 miles west of Indianapolis, 164 miles northeast of St. Louis.

The campus of the University lies just within the corporate limits of the city of Urbana and is bounded on the west by the city of Champaign. These two municipalities, locally known as the "Twin Cities", form in fact one community of about twenty-four thousand inhabitants. The city halls of the two towns are about two miles apart, the campus half way between. The railway, express, telegraph, and telephone services of both cities are, therefore, equally available for the University. Mail for the institution itself should be directed to Urbana to insure prompt delivery. The Urbana post-office maintains a sub-station at the University, located in the Library Building.

### URBANA-CHAMPAIGN

The cities of Urbana and Champaign are in the heart of the "Corn Belt" and form the business and social center of a rich farming community.

Both cities are well paved, well drained, and provided with good water supply. In matters pertaining to health, conditions are excellent. There is a hospital within three blocks of the campus, in which students may be cared for at moderate expense.

The University has no dormitories, but the number of boarding houses is large, and there are forty-two residence halls erected by fraternities, sororities, and local clubs. The material needs of the student body are, therefore, provided for.

The moral and religious conditions of the University community are favorable to the welfare of the students. There are thirty churches, representing eleven denominations, and a number of students' religious associations, leagues, and guilds, including strong Young Men's and Young Women's Christian Associations.

Under the State local option law, the liquor traffic has been barred from both cities.

## RAILWAY CONNECTIONS

The University is connected with neighboring cities in Illinois, including Danville, Bloomington, Decatur, Springfield, and Peoria, and also with St. Louis, by the electric interurban lines of the Illinois Traction System. It will shortly be connected by other interurban lines with Kankakee and Chicago.

It may be reached from Chicago and the north and from points in the south by the Illinois Central Railroad (time from Chicago by express trains, three hours and ten minutes), being on the direct line from Chicago to Cairo and New Orleans. It is joined to the east and the west by the Peoria & Eastern Division of the "Big Four" Route (Cleveland, Cincinnati, Chicago, and St. Louis Railway), as well as by the division of the Wabash Railway which connects Kansas City and St. Louis with Detroit and Buffalo. It is also reached from the west by the Havana branch of the Illinois Central Railroad and from Decatur by another branch of the same system.

The time from New York by way of the Wabash and "Big Four" routes is twenty-six hours, by way of Chicago and the Illinois Central, twenty-four hours. Washington and Philadelphia are about equally distant in time. Pittsburg, Buffalo, Kansas City, and Omaha may be reached in fifteen, fourteen, thirteen, and seventeen hours respectively.

The station of the Illinois Central Railroad is in Champaign. The Wabash and "Big Four" have stations in both Champaign and Urbana. These several stations are each a little more than a mile distant from the University campus. There are several hotels in Champaign and Urbana within easy reach of the University, the Beardsley in Champaign and the Columbian in Urbana being the largest.

## HISTORY

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### 1862. *The Morrill Land Grant*

By this act the national government donated to each state in the Union public land scrip, in quantity equal to 30,000 acres for each senator and representative in Congress, "for the endowment, support, and maintenance of at least one college, whose leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanical arts, \* \* \* \* in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

On account of this grant the State pays the University, semi-annually, interest at the rate of five per cent on about \$610,000 and deferred payments on land contracts amounting approximately to \$35,000.

### *Location chosen*

To secure the location of the University several counties entered into competition by proposing to donate to its use specified sums of money or their equivalent. Champaign County offered a large brick building in the suburbs of Urbana, erected for a seminary and nearly completed, about 1,000 acres of land, and \$100,000 in county bonds. To this the Illinois Central Railroad added \$50,000 in freight.

### 1867. *Incorporation*

The institution was incorporated February 28, 1867, under the name of the Illinois Industrial University. It was placed under the control of a Board of Trustees, consisting of the Governor, the Superintendent of Public Instruction, and the President of the State Board of Agriculture, *ex officio* members, and twenty-eight citizens appointed by the Governor. The chief executive officer was called the Regent, and was made an *ex officio* member of the Board and the presiding officer of both the Board of Trustees and the Faculty. (See also 1873 and 1887 below.)

*1868. The University opened*

The University opened on March 2, 1868. The number of students enrolled was about fifty; the faculty consisted of the Regent and three professors. During the first term another instructor was added, and the number of students increased to 77—all young men.

During the first term instruction was given in algebra, geometry, physics, history, rhetoric, and Latin. Work on the farm and gardens or about the buildings was at first compulsory for all students. In March of the next year, however, compulsory labor was discontinued, save when it was to serve as a part of instruction.

*1868-9. The first laboratories*

During the autumn of 1868 a chemical laboratory was fitted up; and laboratory work in botany was begun the following year.

*1870. Pioneer shop instruction*

In January, 1870, a mechanical shop was fitted up with tools and machinery, and here was begun the *first shop instruction* given in any American university. In the summer of 1871 the Wood Shops and Testing Laboratory (burned on June 9, 1900) were erected and equipped for students' shop work in both wood and iron.

*1870. Women admitted*

On March 9, 1870, the Trustees voted to admit women as students. In the year 1870-71 twenty-four availed themselves of the privilege. Since that time they have constituted from one-sixth to one-fifth of the total number of students.

*1873. First reorganization of the Board of Trustees*

At this time the number of members was reduced from thirty-one (see 1867 above) to eleven—the Governor and the President of the State Board of Agriculture, *ex officio*, and nine others, who were still appointed by the Governor. Beginning at this time also, the President of the Board has been chosen by the members from among their own number for a term of one year. (See also 1887 below.)

*1877. Authority to confer degrees received*

According to the original State law, the usual diplomas and degrees could not be granted by the University; certificates showing the studies pursued and the attainments in each were given instead. The certificates proved unsatisfactory to the holders, and in 1877 the legislature gave the University authority to confer degrees and issue diplomas.



*1885. Change of name*

In this year the General Assembly changed the name of the institution from the *Illinois Industrial University* to the *University of Illinois*.

*1885. The State Laboratory of Natural History transferred to the University*

See page 429.

*1887. Second reorganization of the Board of Trustees*

In 1887 a law was passed making membership in the Board elective, at a general State election, and restoring the Superintendent of Public Instruction as an *ex officio* member. There are now, therefore, three *ex officio* and nine elective members. (For the previous organization of the Board see 1867 and 1873 above.)

*1887. The Agricultural Experiment Station established at the University*

See page 423.

*1890. Additional Federal endowment*

In 1890 the Congress of the United States made further appropriations for the endowment of the institutions founded under the act of 1862. Under this enactment each such college or university received the first year \$15,000, the second year, \$16,000, and in each succeeding year a sum larger by \$1,000 than the amount of the preceding year, until the amount reached \$25,000; this sum was to be paid yearly thereafter.

*1892. The Graduate School*

Beginning with this year, graduate work was undertaken under the name of the Graduate School, but without the organization of a separate faculty.

*1894. The Summer Session*

The first Summer Session of the University was authorized by a vote of the Trustees on March 13, 1894, and was opened in June of that year.

*1896. The School of Pharmacy*

On May 1, 1896, the Chicago College of Pharmacy, founded in 1859, became the School of Pharmacy of the University of Illinois. Its building is located at Michigan Boulevard and Twelfth Street, Chicago.

*1897. The College of Medicine*

Negotiations looking to the affiliation of the College of Physicians and Surgeons of Chicago with the University, which had been going on for several years, were concluded by the Board of Trustees March 9, 1897. Accordingly, the College of Physicians and Surgeons became, on April 21, 1897, the College of Medicine of the University of Illinois. (The College of Medicine was discontinued on June 30, 1912.)

*1897. The School of Music*

By vote of the Trustees on June 9, 1897, the department of music, which had been reorganized and enlarged in 1895, was erected into the School of Music, with a separate faculty and organization.

*1897. The State Water Survey authorized*

See page 431.

*1897. The Library School*

In 1897 the School of Library Economy, which had been established in 1893 at the Armour Institute of Technology in Chicago, was transferred to the University; the Director of that school was appointed Librarian of the University Library; and the Library School was opened.

*1897. The College of Law*

Pursuant to an action of the Board of Trustees, taken December 8, 1896, the School of Law was organized, and was opened September 13, 1897. The course of study covered two years, in conformity with the then existing requirements for admission to the bar of Illinois. In the following November, however, the Supreme Court of the State announced rules relating to examinations for admission to the bar which made three years of study necessary, and the course of study in the Law School was immediately rearranged on that basis. On February 9, 1900, the name of the School of Law was changed, by vote of the Board of Trustees, to *College of Law*.

*1899. The State Entomologist's Office permanently established at the University*

See page 430.

*1900. Courses in Business Administration*

In 1900 the General Assembly made an appropriation for the establishment of courses of training for business life, and, in accord-

ance with that action, the Trustees approved the organization of the Courses in Business Administration.

*1901. The College of Dentistry*

In accordance with an action taken by the Board of Trustees on March 12, 1901, a School of Dentistry was organized as a department of the College of Medicine. The School was opened October 3, 1901. The name was changed to *College of Dentistry* on April 27, 1905. (The College of Dentistry was discontinued on June 30, 1912).

*1903. The Board of Examiners in Accountancy created*

See page 434.

*1903. The Engineering Experiment Station established*

See page 427.

*1905. The School of Education*

By a vote of April 27, 1905, the Board of Trustees established the School of Education, to provide for the professional training of teachers.

*1905. The State Geological Survey established*

See page 432.

*1906-7. The School of Railway Engineering and Administration*

On January 30, 1906, the Board of Trustees created in the College of Engineering a department of railway engineering; on January 22, 1907, supplementing that action, it established the School of Railway Engineering and Administration.

*1906-7. The Graduate School organized as a separate faculty*

The General Assembly appropriated \$50,000 for the Graduate School, and the Executive Faculty of that school was organized.

*1909. A Mine Rescue Station established at the University*

See page 435.

*1911. The Mill Tax*

The General Assembly passed a law providing that in the year 1912, and annually thereafter, the proceeds of a tax of one mill for each dollar of the assessed valuation of the taxable property of the State shall be set apart as a fund for the maintenance of the University.

*1912. The Colleges of Medicine and Dentistry discontinued*

The Colleges of Medicine and Dentistry were discontinued on June 30, 1912.

# EQUIPMENT

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## BUILDINGS AND GROUNDS

The land occupied by the University and its several departments embraces 225 acres, besides a farm of 480 acres. There are at the present time some forty-five buildings on the campus.

### LITERATURE AND ARTS GROUP

*University Hall* (erected 1873) is the "old main building" of the University. It occupies three sides of a quadrangle, and is five stories in height. It is devoted to class rooms and offices.

*Lincoln Hall* (erected 1911) has a frontage of 230 feet. The exterior is brick, stone, and terra cotta. This building provides for the advanced work of the departments of the classics, English, Romance languages, Germanic languages, history, economics, political science, sociology, and philosophy. The first three floors provide, in addition to the ordinary class and consultation rooms, seminar libraries and conference rooms. On the fourth floor are research rooms and two museums, the Museum of Classical Art and Archaeology, and the Museum of European Culture.

*The Commerce Building* (erected 1912) is a fire-proof building three stories high, 153 feet on the front and 60 feet deep, with a one-story annex containing a lecture room 48 feet square. The building has a total floor area of about 29,000 square feet and is to house the work in business administration with its various class rooms, offices, and laboratories. The exterior first story finish is buff Bedford stone; the second and third stories are of brick with carved stone trimmings and cornice. The roof is of tile, and the interior trim is of dark oak throughout.

### GENERAL SCIENCE GROUP

*Natural History Hall* (old part erected 1892; addition 1909) is the largest building on the campus, covering a ground area 135 feet by 275 feet. It is occupied by the departments of botany, entomology, zoölogy, physiology, geology, and mathematics, together with the offices and equipment of the State Geological Survey, and the State Natural History Survey, and the office of the State Entomologist. A fireproof museum 51 feet by 63 feet in size, equipped

with fireproof and dustproof cases, occupies the center of the building.

*The Laboratory of Physics* (erected 1909) is a three-story fireproof brick building trimmed with Bedford limestone. The length is 178 feet and the depth of the wings 125 feet. The large lecture room has a seating capacity of two hundred sixty-two. A one-story annex, 78 by 28 feet, contains the ventilating and heating fans and the machine shop of the department. The total available floor area, exclusive of the basement, is about 60,000 square feet. The large laboratories and the recitation rooms are mostly in the west wing. The east wing is of heavy construction and contains about 30 smaller laboratories for advanced experimental work. The blue print department of the University occupies rooms on the top floor of the building.

*The Chemical Laboratory* (erected 1901-2) is a three-story building, the ground plan of which is shaped like the letter E. The extreme dimensions are 230 feet along the front and 116 feet along the wings. The middle rear wing contains the lecture amphitheater, which seats 350. The end wings contain the general laboratories. The central part of the building is occupied by offices, museum, class and seminar rooms, supply rooms, and a number of special rooms for research work. There is a basement, which contains the ventilating plant and rooms for assaying and metallurgy. In this building are located also the general office and laboratories of the State Water Survey.

*The Astronomical Observatory* (erected 1896) is a brick building with extreme dimensions of 75 by 55 feet. It has three wings and is surmounted by a dome 25 feet in diameter.

*The Ceramics Laboratory* (erected 1910) is a two-story brick building in which are provided a general laboratory, plaster room, pottery room, rough grinding room, machine room, drawing room, library, recitation rooms, chemical laboratory, and office. (See also the Mining and Ceramics Laboratory under "Engineering Group" below.)

*The Entomology Building* is a two-story building 48 by 20 feet, with basement storerooms, and with two insectary wings of greenhouse construction, each 25 by 20 feet. In the main building is an office for the Entomologist, a stenographer's room, an insectary head room, the office of horticultural inspection, and a large fire-proof vault. The glass-covered wings are equipped for experimental entomology and life-history studies.

## ENGINEERING GROUP

*Engineering Hall* (erected 1894) is a four-story building, with a frontage of 200 feet, a depth of 76 feet on the wings and 138 feet on the center, and a floor area of 47,000 square feet. The first and second floors are occupied by the offices, the recitation rooms, and the instrument and drafting rooms of the departments of civil engineering and municipal and sanitary engineering. The engineering lecture room, on the second floor, has a seating capacity of two hundred twenty-five. The third floor is occupied by the offices of the Dean of the College of Engineering and Director of the Engineering Experiment Station and by the office, recitation, and drafting rooms of the department of mechanical engineering. A portion of the third floor and all of the fourth floor is occupied by the department of architecture.

*The Electrical Engineering Laboratory* (erected 1898) is a two-story brick building with floor area of 18,000 square feet. The basement contains the departmental shop, the storage battery room, the electric furnace room, and rooms for electrical research. The first floor contains the undergraduate laboratory, the instrument room, the high potential laboratory, and the drafting, lecture, and recitation rooms. The second floor contains the photometric laboratory, the offices, the departmental library, and a room used by the Electrical Engineering Society.

*The Mechanical Engineering Laboratory* (erected 1905) is a brick building with a frontage of 120 feet, a total depth of 182 feet, and a floor area of 24,000 square feet. The front section is two stories high, and contains offices, lecture and computation rooms, and an instrument room. Back of this are three bays. The middle bay is provided with a concrete testing floor and a 10-ton three-motor traveling crane of 38-foot span. The north bay contains a 5-ton traveling crane and is used for laboratory work in connection with the departments of civil and electrical engineering and theoretical and applied mechanics.

*The Laboratory of Applied Mechanics* (erected 1901-2) is a brick building having a floor area of 16,000 square feet. The front part contains the materials testing laboratory, and the rear wing contains the hydraulics laboratory.

*The Mining and Ceramics Laboratory* (erected 1912) is a one-story building with a floor area of 11,200 square feet. It contains a kiln room for the department of ceramics having an area of 4,300 square feet, a mining engineering laboratory of 3,600 feet area, and a

chemical laboratory for the department of mining engineering. There are also offices and class rooms for the department of ceramics and a Mine Rescue Station equipped with Yeager helmets and arranged for training men in the methods of mine rescue work.

*The Locomotive Testing Laboratory* (erected 1912) is a fireproof building with brick walls 117 feet long and 42 feet wide, connected by a spur with the Illinois Traction System tracks. It houses a locomotive testing plant, which consists of supporting wheels on which rest the drivers of the locomotive to be tested, a dynamometer to which the locomotive drawbar is attached, and which measures the tractive force exerted by the locomotive, water brakes for absorbing the power developed by the locomotive, and other auxiliary apparatus. The exhaust gases pass through a "transite" (or asbestos board) duct to a large fan which forces them through a reinforced concrete cinder separator; the separator removes the cinders and discharges them into the air through a brick stack eight feet in height.

*The Transportation Building* (erected 1912) is a three-story fireproof building of brick trimmed with stone. The general dimensions of the building are 65x189 feet and the total floor area is 34,225 square feet. The first and second floors of the building are occupied by the departments of railway and mining engineering, and the third floor is occupied by the department of general engineering drawing.

*The Metal Shops* (erected 1902) occupy a one-story brick building, with a floor area of 12,000 square feet, containing a lecture room, two office rooms, a machine shop, and a forge shop. The machine shop is 48 by 140 feet. Power is supplied by a 20 horse-power electric motor. A three-ton traveling crane of 12-foot span covers the center of the floor for the entire length.

*The Wood Shop* (erected 1901-2) and the *Foundry* (added 1904) occupy a brick building which has a floor area of 16,000 square feet. The part of the building devoted to the wood shop contains a bench room, lathe room, machine room, and various smaller rooms for lectures, exhibition purposes, etc. The part devoted to the foundry has a molding floor, 35x80 feet, traversed by a 5-ton traveling crane, and a basement room for the storage of materials.

#### AGRICULTURAL GROUP

*The Agricultural Building* (erected 1900) consists of four separate structures, built around a court and connected by corridors. The main building, three stories in height, contains offices, class

rooms, and laboratories for the departments of agronomy, animal husbandry, dairy husbandry, horticulture, and veterinary science; the chemical laboratory of the Experiment Station; administration rooms; and an assembly room (Morrow Hall) with a seating capacity of 500. The other three buildings are two stories high; one is for dairy manufactures, one for farm crops, and one for veterinary science and stock judging. These buildings are of stone and brick, roofed with slate, and contain 113 rooms and a total floor space of about two acres. An adjacent glass structure serves the departments of agronomy and horticulture. There are, in addition to these buildings, three dwellings, three barns, and a greenhouse.

*The Agronomy Building* (erected 1904-5) is 50 by 100 feet in size, of brick and slate, trimmed with stone. It contains a field laboratory for crop work in which yields of experimental plats are studied, sample seeds stored, and specimens preserved.

*The Farm Mechanics Building* (erected 1906-7) is a three-story brick structure containing class rooms, offices, lecture rooms, drafting room, library, laboratories, and tool and storage rooms. The third floor, which is reached by an elevator, furnishes storage room for the greater part of \$16,000 worth of farm machinery loaned the College by various manufacturing companies and used for laboratory work. The facilities afforded by this building, with its equipment, make possible the assembling, testing, and adjusting of all the important machines used in farm operations.

*The Animal Husbandry Cattle Feeding Plant* has a capacity for feeding 150 steers at a time. It consists of open and closed sheds with paved lots adjoining. A storage barn 44 by 72 feet and an experimental silo complete the experimental cattle feeding plant.

*The Beef Cattle Building* (erected 1904-5) is a one-story structure of brick and slate, trimmed with stone, 217 feet across the front, with a wing at either end 33 by 49 feet; the central portion rises two stories and is used for the storage of feed. Other portions of the building are used as quarters for the breeding herd, and will accommodate about 100 head of cattle.

Other buildings for the accommodation of live stock are the horse barn, the piggery, and the large South Farm barn.

*The Experimental Dairy Barns* (erected 1912) comprise a round barn 70 feet in diameter with a reinforced concrete silo in the center, a semi-detached rectangular structure 40 by 70 feet with a Grout silo adjacent, and a small dairy house and shop 26 by 32 feet. The barns are of frame construction on brick walls with solid floors



of the mill type of construction, and contain feed rooms, hay lofts, and other accommodations for the experimental dairy herd. The dairy house is of frame construction, two stories in height and contains office, shop, coal room, dairy room, and four sleeping rooms for employees.

*The Horticultural Building* (erected 1904-5) is a structure of brick and slate trimmed with stone, approximately 50 by 100 feet in size. It is used as a field laboratory for horticultural tests and contains sorting rooms, cold storage, and a laboratory for the mixing of spraying materials and other operations in connection with the horticultural work.

*The Floricultural Greenhouses* (erected 1908) comprise a plant consisting of four glass houses, each 105 by 28 feet, and a service building 26 by 103 feet. Three of the houses are used for experimental work in floriculture, while the fourth is devoted principally to the growing of material for class work in floriculture and plant propagation.

*The Horticultural Greenhouse Group* (under construction 1912) includes (1) a vegetable and plant breeding group and (2) a floricultural group.

The vegetable and plant breeding group consists of a glass house for vegetable growing 29x105 feet, two houses for plant breeding, one 29x79 feet and one 30x80 feet, a wire house for plant breeding 30x80, and a two-story and basement service building 82 feet 6 inches by 36 feet, containing laboratories, work rooms, class rooms and offices, and storage pit.

*The Floriculture Group* consists of glass growing houses 332 by 35 feet, a palm house 80 by 40 feet, and a two-story and basement service building 93 feet 3 inches by 37 feet 3 inches, containing class rooms, work rooms, offices, and laboratories.

The glass houses for both groups represent the best type of modern greenhouse construction; the service buildings are of hollow tile and cement construction.

#### LAW BUILDING

*The Law Building* (erected 1878; remodeled 1902 and 1912) is the second oldest building in the University group. It has two stories and a basement. The upper floor contains the Law Library, the students' conference room, the private offices of the members of the law faculty, and the Moot Court Room, a model court room with a seating capacity of four hundred. On the main floor are the recitation rooms, the Dean's offices, and the faculty room.

## BUILDINGS FOR GENERAL UNIVERSITY USE

*The Library Building* (erected 1896-7) is modern Romanesque in style, is built of Minnesota sandstone, and measures 167 by 113 feet, with a tower 132 feet high. The first floor, or basement, contains the rooms of the catalog and order departments, the bound newspapers, and the University Station Postoffice. The second, or main floor, contains the general reference room, the periodical reading rooms, a small conference room, and the delivery room, which opens into the second story of the stack. The third floor contains the study room, lecture rooms, and office of the Library School, faculty study room, and the office of the librarian and assistant librarian. The five-story book stack is a rear wing to the building, separated from it by a fireproof wall. The delivery room is open to the roof and is lighted by a dome of art glass; the lunettes are decorated with frescoes symbolic of the four older colleges of the University—Literature and Arts, Science, Agriculture, and Engineering.

*The Auditorium* (erected 1907-8) is a brick and stone building for general meeting purposes. It contains an auditorium seating about 2,200 and a memorial vestibule. All general University exercises, including convocations and the commencement gatherings, are held in this building.

*The Men's Gymnasium* (erected 1901) is a three-story building of stone and pressed brick, 100 by 150 feet. On the first floor there is a swimming pool, 26 feet wide, 75 feet long, and 8 feet deep at the lower end, lined with white enamel bricks. This floor contains, also, the general locker room, which is fitted up with all-metal lockers, and with shower bath, and steam baths; rooms for the University athletic teams; a room for visiting teams; a special dressing room for members of the faculty; and offices for the physical director and the instructors in athletics. The entire second floor is one large room, which is fitted up with all the modern appliances for gymnastic exercises. The third floor contains an elevated running track, 15 laps to the mile, which is properly banked on the turns to secure the greatest speed and comfort in running.

*The Armory* (erected 1889-90) has a clear floor space of 15,000 square feet in one hall. It is equipped with racks for 1,200 stands of arms. An annex provides for two pieces of field artillery.

*The New Armory* (under construction 1912) comprises a drill room with a clear area 200x340 feet and a height of 90 feet at the center, the roof being carried by fourteen three-hinged steel arches.

The sides are of hollow tile and the ends of timber construction. Provision is made for the extension of the building to 400 feet in length to allow maneuvering of the cadet regiment by battalions, and for the addition of three-story portions along the sides of the building to contain company rooms, locker rooms, and shooting tubes.

*The Woman's Building* (erected 1905) is in the New England colonial style of architecture, of reddish brown brick, with white stone trimmings. The central part of the structure is the woman's gymnasium. On the lower floor there are a swimming tank, lockers, dressing rooms, and baths. The upper floor is devoted to the main gymnasium, which is 92 by 50 feet. The north wing of the building is given to the department of household science, and the south wing provides rooms for the social life of the women students. The addition to the Womans' Building (erected 1912) is a three-story fireproof building with basement. It is 200 feet long on the front and 83 feet on each connecting wing, having 43,000 square feet of floor area. It has a large colonade with towers on the front and two smaller colonades on the north and south of the inner court. The addition is similar to the old building in finish and supplements the working space of the departments using it. It has two halls for literary societies and a modern flat on the upper floor, and an institutional kitchen and large dining room on the second floor. There are also offices for the Dean of Women and the Director of the Courses in Household Science, laboratories, social rooms, and space for the expansion of gymnasium work.

#### THE PRESIDENT'S HOUSE

*The President's House* (erected 1896) is a three-story frame building, in the colonial style. The first story is designed primarily for entertaining; large reception and dining parlors are so arranged as to open together into a central corridor. The second and third stories provide library and living rooms.

#### SERVICE BUILDINGS

*The Central Heat and Power Plant* (erected 1902; addition 1910) is 55 by 120 feet. It contains boilers aggregating 1,800 horse-power. A supplemental boiler and power plant, designed ultimately to carry the load of the present station, is equipped with boilers of 1,000 horse-power. These two stations furnish steam for heating and power to all buildings on the campus. A power plant containing a 250-kilowatt Allis-Chalmers direct connected steam engine and dynamo, a 125-kilowatt direct connected Westinghouse engine and

generator, and a 100-kilowatt Curtiss turbo-generator, together with the accessories necessary to a complete power station, supplies current for light and power to all parts of the grounds. The pipe-lines of the heating system and the circuits for distributing electricity are carried from the central plant to the several buildings through brick tunnels. Altogether there are now 4,425 feet of tunnels for such purposes. The new boiler and power plant provides temporary quarters for the electric test car of the department of railway engineering.

*The Pumping Station* of the University water-works is a brick building, 38 by 73 feet, connected with the central heating station. Four 8-inch wells, 145 feet deep, and one 12-inch well, 148 feet deep, supply the University with water. A masonry reservoir provides for a fire-reserve supply. The pumps, tanks, and connections are arranged to give opportunities for experimental work, and also to vary the working conditions in the adjacent hydraulics laboratory. In this building is kept the equipment of the University fire department, including an electric automatic hose and chemical wagon.

### LABORATORIES

Twenty-six departments of the University are equipped with laboratories. The following list shows the buildings in which these are located:

#### GENERAL SCIENCE LABORATORIES

Botany—Natural History Hall  
Ceramics—Ceramics Laboratory  
Chemistry—Chemical Laboratory  
Entomology—Natural History Hall  
Geology—Natural History Hall  
Physics—Laboratory of Physics  
Physiology—Natural History Hall  
Psychology—University Hall  
Zoölogy—Natural History Hall

#### ENGINEERING LABORATORIES

Cement—Mechanical Engineering Laboratory  
Electrical engineering—Electrical Engineering Laboratory  
Founding—Wood Shop  
Forging—Metal Shops  
Hydraulics—Laboratory of Applied Mechanics  
Locomotive—Locomotive Laboratory

Machine Construction—Metal Shops  
 Materials testing—Laboratory of Applied Mechanics  
 Mechanical engineering—Mechanical Engineering Laboratory  
 Mining—Mining Engineering Laboratory  
 Roads—Mechanical Engineering Laboratory  
 Wood Working—Wood Shop

## SPECIAL RESEARCH LABORATORIES

<i>Agricultural Experiment Station—</i>	Agricultural Building
Bacteriological laboratory	
Chemical laboratory	
Physical laboratory	
<i>Geological department—</i>	Natural History Hall
Laboratory of economic geology	
<i>State Entomologist's Office</i>	Natural History Hall
<i>State Laboratory of Natural History—</i>	Natural History Hall
<i>State Water Survey—</i>	Chemical Laboratory
Laboratory for sanitary water analysis	

## MUSEUMS AND COLLECTIONS

## COLLEGE OF LITERATURE AND ARTS

*Art.*—A collection of casts, photographs, and engravings presented to the University in 1876 by citizens of the community has, for want of a suitable gallery, been placed in different buildings on the campus. Eight large statues are in the auditorium foyer. Numerous pieces of this collection are now in the studios of the department of art and design in University Hall, and others are used to decorate the corridors and class rooms of University Hall, Natural History Hall, and the Library. A collection of eighty-one German and Japanese prints purchased by the department of art and design from the St. Louis Exposition in 1905 is displayed in the rooms of the department of art and design.

Other collections of value to art students, consisting of a number of casts of Moorish, Spanish, and German ornament and miscellaneous casts, models, prints, and drawings, are placed in the studios and corridors of the department of art and design.

*Classical Archaeology and Art.*—This museum is located in Room 402 Lincoln Hall, and contains casts of important works of Greek and Roman sculpture; miscellaneous originals and models of Egyptian, Greek, and Roman antiquities; and over 1,100 mounted photographs of historic sites and archaeological remains in Greece,

Italy, and other parts of the ancient world. Over 1,100 slides belonging to the department of the classics are also available for illustrative purposes. The museum is open at regularly announced hours under the care of a custodian.

*Commerce.*—For its courses in industrial economics and commerce the University has a working collection of the materials of commerce; a lantern and several hundred slides; political and industrial maps; and diagrams and stereoscopic views illustrating various phases of commerce and industry. Most of the articles constituting the commercial museum are the gift of the Philadelphia Commercial Museum.

*Education.*—In the rooms of the department of education in University Hall is a collection of illustrative material from the manual training departments of various schools; photographs of school buildings; drawings and constructive work by pupils in the public schools; and the nucleus of a representative collection of apparatus for the school laboratory.

*European Culture.*—The Museum of European Culture is in the north wing of Lincoln Hall. The collection consists of casts of Romanesque, Gothic, and Renaissance art, models of early weapons and armor, facsimiles of miniatures and types of writing from medieval manuscripts, replicas of seals, reproductions of runic inscriptions, of early ivory carving, of musical instruments, etc. The purpose of the museum is to collect material to illustrate the history of European culture.

#### COLLEGE OF SCIENCE

*Botany.*—The *herbarium* contains about 65,000 mounted specimens of plants. The flora of North America are fairly well represented; the collection of species of flowering plants indigenous to Illinois is practically complete; and a collection of foreign species has been made. The collection of fungi amounts to 32,000 named specimens, and includes a set of those most injurious to other plants, causing rusts, moulds, etc.

*Entomology.*—The entomology collections of the University include an elementary reference series of 6,400 specimens, representing 1,600 common species; and the Bolter collection, donated to the University by the executors of the estate of the late Andreas Bolter, of Chicago, which now contains about 120,000 specimens representing over 16,000 species. The department has access, also, to the insect collections of the State Laboratory of Natural History, which

contain 312,000 pinned insects and 22,216 vials and bottles of specimens in alcohol, mainly from Illinois.

*Geology.*—The geology collections are to be found in the Natural History Building. *Lithology* is represented by type collections of rocks aggregating 9,000 specimens; 1,000 thin sections of rocks and minerals; ornamental building stones; a stratigraphic collection to illustrate Illinois geology; a collection of Illinois soils (104), and one of polished marbles, granites, and other ornamental stones. The *mineralogy collection* is rich in rock-forming minerals, ores, and materials of economic value. It contains over 12,000 specimens; 575 crystal models; and a collection of gems and precious stones. The *paleontology collection* (49,000 specimens) contains representative fossils from the entire geologic series, but is especially rich in paleozoic forms. It embraces the private collections of A. H. Worthen (including 742 type specimens); Tyler and McWhorter; Hertzner; the greater part of the collections made by the Geological Survey of the state under Worthen; 200 thin sections of corals and bryozoa; the Ward collection of casts; and special collections representing the fauna and flora of particular groups.

*Zoölogy.*—The zoölogy collections have been specially selected and prepared to illustrate the courses of study in zoölogy and to present a synoptical view of the zoölogy of the State. Most of them are placed in the new museum room in the Natural History Building, and in adjacent corridors. The mounted mammals include a collection of the ruminants of the United States and representatives of the other orders of Mammalia except the Sirenia. The same orders are also represented by mounted skeletons.

The collection of mounted birds includes representatives of all the orders and families of North America, together with a number of characteristic tropical, Bornean, and New Zealand forms. The collection is practically complete for Illinois species. There is also a collection of the nests and eggs of Illinois birds.

The cold-blooded vertebrates are represented by a series of mounted skins of larger species, both terrestrial and marine; mounted skeletons of typical representatives of the principal groups, alcoholic specimens; and casts. The alcoholics include series of the reptiles, amphibians, and fishes, the latter comprising about 300 species. The casts represent about seventy-five species, nearly all fishes.

The Mollusca are illustrated by alcoholic specimens of all classes and orders, and dissections showing the internal anatomy of typical

forms. There are several thousand shells, belonging to more than 2,000 species. The collection of the Illinois aquatic species is nearly complete.

The lower invertebrates are represented by several hundred dried specimens and alcoholics, and by a series of Blaschka glass models.

The embryology of vertebrates and invertebrates is illustrated by several sets of Ziegler wax models and series of sections and other preparations.

In addition to the foregoing, the collections of the State Laboratory of Natural History are available for illustrative purposes, as well as for original investigation by advanced students.

#### COLLEGE OF ENGINEERING

*Architecture.*—The architecture collections include plaster casts of architectural detail and ornament; 9,400 lantern slides of architectural subjects and 900 slides of painting and sculpture; 20,000 classified plates, photographs, and 2,400 stereoscopic views; a working library of about 1,800 volumes on architecture and the allied arts; a collection of 300 examples of American woods, shown in three sections each; and collections of architectural drawings and of specimens of building materials, fittings, and appliances.

*Civil Engineering.*—The civil engineering department has samples of iron, steel, wood, brick, and stone; materials for roads and pavements; models of arches and trusses. The department also possesses a collection of photographs and blue-print working drawings of bridges, metal skeleton buildings, masonry structures, standard railroad construction, etc.

*Electrical Engineering.*—This department has a collection of samples illustrating standard practice in the industrial applications of electricity. There is also a growing collection of lantern slides, photographs, blue-prints, drawings, pamphlets, and other engineering data.

*Mechanical Engineering.*—This department includes in its equipment part of a set of Reuleaux models; models of valve gears; sections of steam pumps; injectors; valves, skeleton steam and water gauges; standard packings; steam-pipe coverings; and drop forgings. There are also examples of castings, perforated metal, defective boiler plates, and set of drills, with samples of oil, iron, and steel. A number of working drawings from leading firms form a valuable addition to these collections.

*Mining Engineering.*—This department has a complete exhibit



of sized coal as prepared by typical Illinois washeries, the raw materials and the finished products illustrating the briquetting of coal, models of a metalliferous mine and of timber and steel mine supports, a complete exhibit of explosive and blasting materials and appliances, the Draeger, Fleuss, and Westphalia breathing apparatus, and all of the appliances necessary for mine rescue and first aid demonstration, a collection of safety-lamps and other mine-lighting devices, and working drawings and photographs of mine machinery.

#### COLLEGE OF AGRICULTURE

The various agricultural departments maintain collections illustrative of their work; prominent among which are those showing typical specimens of standard varieties of corn; wax models of fruit and vegetables; a horticulture herbarium; specimens of breeds of live stock; a collection of farm machinery; and exhibits of negatives and samples showing the progress of certain investigations, especially with fruit, crops, and soils.

See further the description of the facilities for instruction and methods of work of the departments of agronomy, animal husbandry, dairy husbandry, and horticulture, pages 183 to 189.

#### LIBRARY SCHOOL

The School has made a collection of books and pamphlets on library science; of library reports and catalogs; of mounted samples showing methods of administration in all departments; of labor-saving devices and fittings; and of photographs and lantern slides illustrating the history of books and libraries.

#### LIBRARIES

(For the Library Staff see page 40)

The University Library includes all the books belonging to the colleges and schools of the University which are situated in Urbana. The library of the School of Pharmacy, numbering about 2,000 volumes, is in Chicago.

On October 1, 1912, the several libraries contained the following numbers of bound volumes and pamphlets:

	Volumes	Pamphlets
General library, including departmental collections.....	217,370	24,000
Pedagogical library.....	600	3,550
State Laboratory of Natural History library.....	8,020	22,200
Pharmacy library.....	2,000	.....

The Library receives about 1,900 serial publications.

*The Library* is housed, for the most part, in the Library building, and is for the use of the whole University. The officers of instruction and administration of the University, the graduate students, and the members of the senior class have direct access to the shelves; other students may have this privilege upon the recommendation of their instructors. All students have the direct use of 10,700 volumes in the reading rooms, and in addition graduate students have the use of the seminar libraries.

As a part of the Library are included several special collections: *The University of Illinois collection*, including printed material illustrating the history of the University: about 300 volumes. *College Publications collection*, comprising the catalogs, announcements, reports, studies, etc., of other educational institutions: about 4,900 volumes. *Thesis collection*, a complete file of the original copies of the theses presented for graduation from the University of Illinois; they are bound and filed by years: 1,800 volumes. *The Dziatzko collection of Library Economy*, bought in 1905, the entire library of Karl Dziatzko, librarian of Göttingen University: 300 volumes, 250 pamphlets. *The Dittenberger collection of the Classics*, bought in 1907, the entire library of Wilhelm Dittenberger, professor of Classical Philology in the University of Halle: 5,600 items. *The Heyne collection*, purchased by the University in 1909, the philological library of Professor Moritz Heyne, of the University of Göttingen: about 5,000 items, principally on German philology and literature. *The Karsten collection*, principally on French and German philology and literature, the library of the late Professor Gustaf E. Karsten, presented by Mrs. Eleanor G. Karsten. *The Gröber collection*, purchased in 1912, the entire library of the late Professor Gustav Gröber, of Strasburg: 6,300 titles, principally on the Romance languages.

Twenty-one seminar and departmental collections are maintained in various buildings on the campus, including the six seminars in Lincoln Hall; these are primarily reference collections for the use of graduate students and advanced undergraduate students in the departments using the respective buildings. The hours of opening and the regulations for the use of these collections usually differ somewhat from the regulations printed below.

*Mason Library of Western History.* The library of western history collected by Edward G. Mason, Esq., long president of the

Chicago Historical Society, is in the Public Library of the city of Champaign, and is accessible to students in the University.

#### LIBRARY REGULATIONS

The General Library is primarily for free reference use. The privilege of drawing books is accorded to all officers of instruction and government, to all registered students, and to other accredited persons. Books not reserved for classes may be borrowed for home use for two weeks, and may be renewed for two weeks more if not specially restricted or called for. All books are subject to recall at any time when needed for university work.

General reference books, books reserved for classes, all general periodicals, and certain other groups of books are to be consulted in the reading rooms only. They may not be loaned from the Library except when the reading rooms are closed. They must then be returned by the time the Library next opens.

Books from the stack which are not returned on time are subject to a fine of two cents a day. Books from the reference, reserve, and periodical shelves, as well as some special collections, are subject to a fine of twenty-five cents a day if kept overtime. Books recalled for university work must be returned at once upon receipt of the notice. If not returned within two days after notice is mailed a fine of twenty-five cents a day is charged. All books lost or damaged must be replaced or paid for.

*Hours of Opening.* The General Library is open week days during the general sessions of the University, from 7:45 a. m. to 10 p. m., and on Sundays from 2 p. m. to 6 p. m. During the Summer Session, the Library is open from 7:45 a. m. to 10 p. m. on week days, but is not open on Sundays. During the summer vacation, the Library is open from 9 a. m. to 12 m. Permits may be given for use at other hours. The Library is regularly closed on New Year's, Independence, Labor, Thanksgiving, and Christmas days.

# ADMINISTRATION

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## GOVERNMENT

The government of the University is vested by law primarily in a Board of Trustees, consisting of twelve members. The Governor of the State, the Superintendent of Public Instruction, and the President of the State Board of Agriculture are members *ex officio*. The other nine members are elected by the people of the State for terms of six years; the terms of three members expire every second year.

The administration of the University is vested by the Board of Trustees in the President of the University, the Senate, the Council of Administration, the Faculties of the several colleges, and the Deans of the colleges and Directors of the schools.

The President is the administrative head of the University.

The Senate is composed of the full professors and those other members of the faculty who are in charge of separate departments of the various colleges and schools. It is charged with the direction of the general educational policy of the University.

The Council of Administration is composed of the President, the Dean of the Graduate School, the Deans of Men and Women, and the Deans of the several colleges. It constitutes an advisory board to the President, and has exclusive jurisdiction over all matters of discipline. The Council does not determine educational policy; but when any matter arises which has not been provided for by common usage or by rule of the Senate and cannot be conveniently laid over till the next meeting of the Senate, the Council may act upon the same according to its discretion.

The Faculties of the colleges and schools of the University, composed of the members of the corps of instruction of these colleges and schools, have jurisdiction, subject to higher University authority, over all matters which pertain exclusively to these organizations.

The Dean of the Graduate School, the Deans of the several colleges, and the Directors of the schools are responsible for the carrying out of all University regulations within their respective departments.

The Dean of Men and the Dean of Women act as advisers to undergraduate students and are charged with the general care of the conduct of these students.

## DEPARTMENTS AND COURSES

For the purpose of administration, the University is divided into several colleges and schools. These are not educationally separate, but are interdependent, and form a single unit.

The colleges and schools are as follows:

- I. The College of Literature and Arts
- II. The College of Science
- III. The College of Engineering
- IV. The College of Agriculture
- V. The Graduate School
- VI. The Library School
- VII. The School of Music
- VIII. The School of Education
- IX. The School of Railway Engineering and Administration
- X. The College of Law
- XI. The School of Pharmacy

*The College of Literature and Arts* offers courses in—

- i. Philosophy and arts, including—
  - (a) The ancient classical languages
  - (b) The Romance languages
  - (c) The Germanic languages
  - (d) The English language and literature, including rhetoric
  - (e) Mathematics
  - (f) The political and social sciences—
    - History
    - Economics
    - Accountancy
    - Political science
    - Sociology
  - (g) Philosophical subjects—
    - Philosophy
    - Psychology
    - Education
  - (h) Art
  - (i) Household science

By the grouping of certain elective subjects students in this College are also offered opportunities for specific vocational training as follows :

2. Business Administration—
  - (a) General business
  - (b) Banking
  - (c) Accountancy
  - (d) Railway administration—  
Railway traffic and accountancy  
Railway transportation
  - (e) Insurance
3. Journalism
4. Household science and administration
5. Preliminary to law

*The College of Science* offers courses in—

1. General science, affording opportunity to specialize in :
  - (a) Astronomy
  - (b) Botany
  - (c) Chemistry
  - (d) Education
  - (e) Entomology
  - (f) Geology, including mineralogy
  - (g) Household science
  - (h) Library science
  - (i) Mathematics
  - (j) Physics
  - (k) Physiology
  - (l) Psychology
  - (m) Zoölogy
2. Chemistry
3. Chemical engineering
4. Ceramics
5. Ceramic engineering
6. Household science
7. Preparation for medicine
8. Science and engineering (combined course)

*The College of Engineering* offers courses in—

1. Architecture
2. Architectural engineering
3. Civil engineering

4. Electrical engineering
5. Mechanical engineering
6. Mining engineering
7. Municipal and sanitary engineering
8. Railway civil engineering
9. Railway electrical engineering
10. Railway mechanical engineering

*The College of Agriculture* offers courses in—

1. Agronomy
2. Horticulture, floriculture, and landscape gardening
3. Animal husbandry
4. Dairy husbandry
5. Veterinary science
6. Household science
7. Agricultural extension
8. Teachers' course

*Military science* and *physical training* are provided in all the schools and colleges in Urbana.

*The Graduate School* offers courses in—

Philology, including the classical languages, Romance languages, Germanic languages, and English

Mathematics

Political and social sciences, including history, economics, sociology, and political science

Philosophy, including psychology and education

Physical sciences, including physics, chemistry, astronomy, and geology

Biology, including botany, zoology, entomology, and physiology

Engineering, including architecture, architectural engineering, civil engineering, electrical engineering, mechanical engineering, mechanics, mining engineering, municipal and sanitary engineering, and railway engineering

Agriculture, including agronomy, animal husbandry, dairy husbandry, floriculture, horticulture, and thremmatology

Household science

*The Library School* offers a professional course of two years in preparation for the work of the librarian, leading to the degree of Bachelor of Library Science. Graduation from a college or university of approved standing is required for admission to the Library School.

*The School of Music* offers courses in vocal and instrumental music, leading to the degree of Bachelor of Music; and provides training in public school methods in music.

*The School of Education* enrolls, at the beginning of the junior year, students already registered in other colleges of the University who are preparing to teach, and directs their work for the remaining two years.

*The School of Railway Engineering and Administration* offers courses of study leading to the degree of Bachelor of Science in railway civil, railway electrical, and railway mechanical engineering; and also courses in railway transportation and in railway traffic and accountancy leading to the degree of Bachelor of Arts.

*The Courses in Business Administration* virtually constitute a school of commerce. They include courses in social and industrial economics, consular service, accountancy, banking, and railway administration, leading to the degree of Bachelor of Arts.

*The College of Law* offers a course of three years leading to the degree of Bachelor of Law. One year of college work in an institution of approved standing is required for admission to the College of Law.

Students holding the bachelor's degree in arts or science may become candidates in this College for the degree of Doctor of Law (J.D.).

*The School of Pharmacy* offers courses in the branches necessary to a scientific and practical knowledge of pharmacy, including pharmacy, chemistry, materia medica, botany, physics, and physiology. The courses lead to the degrees of Graduate in Pharmacy and Pharmaceutical Chemist.

*The Summer Session*, of eight weeks, offered in 1912 courses in accountancy, agricultural education, art and design, botany, chemistry, drawing (general engineering), economics, education, English, entomology, French, German, history, Latin, manual training, mathematics, mechanical engineering, mechanics (theoretical and applied), microscopical technique, philosophy, physical geography, physical training for men and for women, physics, political science, psychology, rhetoric, sociology, Spanish, and zoölogy.

All the courses given in the Summer Session are of collegiate grade and may be counted toward the bachelor's degree. Certain advanced courses may be counted toward the master's degree.



# ADMISSION

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## GENERAL STATEMENT

An applicant for admission to any of the colleges or schools of the University must be at least 16 years of age. Candidates for admission to the School of Pharmacy (Chicago) must be 17 years of age.

Women are admitted to all departments under the same conditions and on the same terms as men.

Students may be admitted at any time, but should enter if possible at the beginning of the fall semester (in 1913, September 22) or at the beginning of the spring semester (in 1914, February 9). Students can seldom enter the College of Engineering to advantage except at the opening of the school year in September.

The entrance requirements for the undergraduate departments, including the colleges of Literature and Arts, Science, Engineering, and Agriculture, and the School of Music, amounting in each case to 15 units of high school work, are stated in detail immediately below.

*The College of Law* requires, in addition to 15 units of high school credit, one year of college work in arts, letters, and science in an institution having standards equal to those of the University of Illinois. (See page 243.)

*The Library School* requires a bachelor's degree in arts, letters, or science from an institution having standards equal to those of the University of Illinois. (See page 208.)

*The School of Pharmacy (Chicago)* requires for admission to its shorter course, leading to the degree of Graduate in Pharmacy, one year of high school work or the full educational equivalent; and for admission to its longer course, leading to the degree of Pharmaceutical Chemist, graduation from an accredited high school or the equivalent. (See page 252.)

## ENTRANCE REQUIREMENTS OF THE UNDERGRADUATE COLLEGES

An applicant for admission to any one of the undergraduate departments—including the colleges of Literature and Arts, Science,

Engineering, and Agriculture, and the School of Music—must offer credit for fifteen (15) units of high school or other secondary school work, so chosen as to include:

I. Those subjects *prescribed alike by all the undergraduate departments* (see *List A* below).

II. Certain subjects *prescribed in addition by the individual department* which the student wishes to enter.

III. Enough *electives* to make up the required total of 15 units.

A *unit* is the amount of work represented by the pursuit of one preparatory subject, with the equivalent of five forty-minute recitations a week, through 36 weeks; or, in other words, the work of 180 recitation periods of forty minutes each, or the equivalent in laboratory or other practice.

#### I. UNITS PRESCRIBED BY ALL THE COLLEGES (LIST A)

Of the 15 units required, the following  $5\frac{1}{2}$  units, constituting *List A*, are *prescribed* for admission to the freshman class in *all* the undergraduate colleges of the University, and no substitutes are accepted.

##### *List A. Units Prescribed by All the Colleges*

English composition.....	1	unit
English literature.....	2	units
Algebra .....	$1\frac{1}{2}$	units
Plane geometry.....	1	unit

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Total, List A.....  $5\frac{1}{2}$  units

#### II. ADDITIONAL PRESCRIPTIONS OF INDIVIDUAL COLLEGES

Of the  $9\frac{1}{2}$  units that remain, certain others are *prescribed* for admission by *individual colleges*, and in each case no substitutes are accepted by the college in question. These additional prescriptions are as follows:

##### *Units Prescribed in Addition by Individual Colleges*

For the College of Literature and Arts:

History .....	1	unit
Foreign languages <sup>1</sup> .....	3	units

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<sup>1</sup>At least two of these must be in the same language. Three units in Latin must be presented if the student wishes to pursue the study of that subject in the University.

For the Colleges of Science<sup>1</sup> and Agriculture:

Science ..... 2 units

For the College of Engineering:

Solid and spherical geometry..... $\frac{1}{2}$  unit

Physics ..... 1 unit

For the School of Music:

History ..... 1 unit

Foreign languages<sup>2</sup> ..... 3 units

Music ..... 2 units

### III. ELECTIVES

The remainder of the required 15 units—after those *prescribed* (1) by all the colleges, and (2) by the individual college desired, have been counted—must be made up from the subjects in *Lists B* and *C* below. For the College of Literature and Arts, only two units from List C may be offered. For the Colleges of Science, Engineering, and Agriculture, three units from List C are accepted. No subject is accepted for an amount less than the minimum, or greater than the maximum, mentioned in the lists. For a description of the subjects required and accepted for admission see page 94.

#### *List B. Electives*

Astronomy .....	18 weeks	$\frac{1}{2}$ unit
Botany .....	18 or 36 weeks	$\frac{1}{2}$ or 1 unit
Chemistry .....	36 weeks	1 unit
Civics .....	18 or 36 weeks	$\frac{1}{2}$ or 1 unit
Commercial geography.....	18 weeks	$\frac{1}{2}$ unit
Drawing .....	18 or 36 weeks	$\frac{1}{2}$ or 1 unit
Economics .....	18 weeks	$\frac{1}{2}$ unit
English literature (3rd unit).....	36 weeks	1 unit
French .....	36 to 144 weeks	1 to 4 units
Geology .....	18 or 36 weeks	$\frac{1}{2}$ or 1 unit
Geometry, solid and spherical.....	18 weeks	$\frac{1}{2}$ unit
German .....	36 to 144 weeks	1 to 4 units
Greek .....	36 to 108 weeks	1 to 3 units
History .....	36 to 108 weeks	1 to 3 units
Latin .....	36 to 144 weeks	1 to 4 units
Physics .....	36 weeks	1 unit
Physical geography.....	18 or 36 weeks	$\frac{1}{2}$ or 1 unit

<sup>1</sup>Two years of German are prescribed (as well as two units in science) for admission to the course in *chemical engineering* in the College of Science.

<sup>2</sup>At least two of these units must be in the same language.

Physiology .....	18 or 36 weeks	$\frac{1}{2}$ or 1 unit
Spanish .....	36 to 72 weeks	1 to 2 units
Trigonometry .....	18 weeks	$\frac{1}{2}$ unit
Zoölogy .....	18 or 36 weeks	$\frac{1}{2}$ or 1 unit

*List C.\* Limited Electives*

Agriculture .....	36 to 72 weeks	1 to 2 units
Bookkeeping .....	36 weeks	1 unit
Business law.....	18 weeks	$\frac{1}{2}$ unit
Domestic science.....	36 weeks	1 unit
Manual training†.....	36 to 72 weeks	1 to 2 units

## SUMMARY BY COLLEGES

The requirements listed above may be summarized by colleges as follows:

*For the College of Literature and Arts:*

- I. List A (prescribed by all the colleges).....  $5\frac{1}{2}$  units
  - II. Special prescriptions by this college—
    - History ..... 1 unit
    - Foreign languages (see foot-note, p. 76).... 3 units
  - III. Electives (not more than 2 units from List C)....  $5\frac{1}{2}$  units
- 
- 15 units

*For the Colleges of Science and Agriculture:*

- I. List A (prescribed by all the colleges).....  $5\frac{1}{2}$  units
  - II. Special prescription by these colleges—
    - Science‡ ..... 2 units
  - III. Electives (not more than 3 units from List C)..  $7\frac{1}{2}$  units
- 
- 15 units

*For the College of Engineering:*

- I. List A (prescribed by all the colleges).....  $5\frac{1}{2}$  units
  - II. Special prescriptions by this college—
    - Solid and spherical geometry.....  $\frac{1}{2}$  unit
    - Physics ..... 1 unit
  - III. Electives (not more than 3 units from List C).. 8 units
- 
- 15 units

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\*The subjects named in List C must be taught in accordance with specifications which are set forth in the High School Manual. Further information may be had on application to the High School Visitor.

†In giving credit for manual training the University specifies that the work is to be done by competent teachers, as determined by inspection, and that credit shall not exceed one unit for 360 forty-minute periods of work, including the necessary drawing and shop work.

‡See also, for the College of Science, footnote 1 on page 77.

*For the School of Music:*

I. List A (prescribed by all departments).....	5½ units
II. Special prescriptions by this school—	
History .....	1 unit
Foreign languages (see foot-note, page 77) ..	3 units
Music .....	2 units
III. Electives (not more than 3 units from List C) ..	3½ units
	<hr/>
	15 units

## METHODS OF ADMISSION

The credits required for admission to the undergraduate departments, as detailed above, may be secured:

- (a) By examination.
- (b) By certificate from an accredited high school or other secondary school.
- (c) By transfer from another university or college of recognized standing.

## (A) ADMISSION BY EXAMINATION

## I. THE UNIVERSITY ENTRANCE EXAMINATIONS

The University entrance examinations are given at the University in Urbana (in Room 228, Natural History Building) three times in each year: in September, immediately before the opening of the fall semester; in January, shortly before the opening of the spring semester; and in July, during the Summer Session.

These examinations cover all the subjects required or accepted for admission, as outlined in the "Description of Subjects Accepted for Admission" on pages 94 to 103.

For programs of these three sets of examinations for 1913-1914, see pages 85, 86, and 87.

## II. THE COLLEGE ENTRANCE EXAMINATION BOARD EXAMINATIONS

The certificate of the College Entrance Examination Board, showing a grade of 60 per cent. or higher, will be accepted for admission in any subject in the lists on pages 94 to 103, under the usual restrictions of the University governing amount of credit. These examinations will be held during the week of June 16-21, 1913.

All applications for examination must be addressed to the Secretary of the College Entrance Examination Board, Post Office Sub-Station 84, New York, N. Y., and must be made upon a blank form to be obtained from the Secretary of the Board upon application.

Applications for examination at points in the United States east of the Mississippi River, also at Minneapolis, St. Louis, and other points on the Mississippi River, must be received by the Secretary of the Board at least two weeks in advance of the examinations; that is, on or before Monday, June 2, 1913; applications for examination elsewhere in the United States or in Canada must be received at least three weeks in advance of the examinations; that is, on or before Monday, May 26, 1913; and applications for examination outside of the United States and Canada must be received at least five weeks in advance of the examinations; that is, on or before Monday, May 12, 1913.

Applications received later than the dates named will be accepted when it is possible to arrange for the admission of the candidate concerned, but only upon the payment of \$5.00 in addition to the usual fee.

The examination fee is \$5.00 for all candidates examined at points in the United States and Canada, and \$15.00 for all candidates examined outside of the United States and Canada. The fee (which cannot be accepted in advance of the application) should be remitted by postal order, express order, or draft on New York to the order of the College Entrance Examination Board.

A list of the places at which examinations are to be held by the Board in June, 1913, will be published about March 1. Requests that the examinations be held at particular points, to receive proper consideration, should be transmitted to the Secretary of the Board not later than February 1.

### III. THE NEW YORK REGENTS' EXAMINATIONS

Credits will be accepted, also, from the examinations conducted by the Regents of the University of the State of New York.

#### (B) ADMISSION BY CERTIFICATE FROM AN ACCREDITED PREPARATORY SCHOOL

Blank certificates for students wishing to enter the University by *certificate* from an accredited high school or academy may be had of the Registrar. They should be obtained early and should be filled out and sent in to the Registrar for approval as soon as

possible after the close of the high school year in June. Certificates received at the University after September 18 (in 1913) will be held until the arrival of the student unless such certificates are accompanied by an addressed envelope with a special delivery stamp.

#### ACCREDITED SCHOOLS

The High School Visitor of the University visits and inspects on request high schools and other preparatory schools throughout the State. On the basis of his reports, approved by the Committee on Accredited Schools and by the Council of Administration, the University accredits all work which is found to be sufficiently well done. For a list of Accredited Schools, correct to January 1, 1913, see page 88. Not all the schools named in this list, however, are accredited for the same amount of work nor all for the same subjects. A student presenting a certificate from any one of these schools will be given entrance credit for all the subjects named therein *for which the said school is specifically accredited as shown in the certificate of its accredited relation issued to the school by the University.*

Entrance credits will also be accepted on certificate from the following sources:

1. From schools accredited by the North Central Association of Colleges and Secondary Schools.
2. From schools accredited to the state universities which are included in the membership of the North Central Association of Colleges and Secondary Schools.
3. From the state normal schools of Illinois and other state normal schools having equal requirements for graduation.
4. From schools approved by the New England College Entrance Certificate Board.

#### FOREIGN STUDENTS

Candidates for admission who come from foreign countries should bring complete official credentials. Certificates from oriental countries should be accompanied by certified translations. Upon arriving at the University foreign students should consult with the Adviser to Foreign Students, Room 214, Lincoln Hall.

#### EXAMINATION IN RHETORIC I

Those students who show by examination a proficiency in composition sufficient to qualify them for the second semester's work in Rhetoric I may be excused from the first semester's work. An ex-

amination to test such proficiency will be given at 7:00 p. m., on the first day of registration (in 1913, September 22). The results of this examination will be announced the following morning. Students who try this examination should defer their registration until they learn whether or not they have passed in the examination.

### (C) ADMISSION BY TRANSFER OF ENTRANCE CREDITS FROM OTHER COLLEGES OR UNIVERSITIES

A person who has been admitted to another college or university of recognized standing will be admitted to this University upon presenting a certificate of honorable dismissal from the institution from which he comes and an official statement of the subjects upon which he was admitted to such institution, provided it appears that the subjects are those required here for admission by examination or real equivalents. No substitutes will be accepted for the subjects *prescribed* for all colleges or by individual colleges as indicated above (pages 74-79).

For admission to advanced standing by transfer of college credits see page 84 below.

Students intending to transfer to the University of Illinois should send an official statement of their college credits, accompanied by a summary of their preparatory work and by a letter of honorable dismissal, to the Registrar as early in the summer as possible.

### CONDITIONED FRESHMEN

A student who lacks not more than 2 of the 15 units required for matriculation may be entered as a conditioned freshman, provided the deficiencies are not in work which should precede the prescribed courses of the first semester, and provided that all his entrance conditions are such as can be made up during his first year.

A conditioned student is not matriculated and must pay a tuition fee of \$7.50 a semester in addition to the regular incidental fee of \$12.00 a semester.

No student having entrance conditions may register for a second year in the University, except on the recommendation of the faculty of the college or school in which he is enrolled, approved by the Council of Administration. Only in rare and especially meritorious cases will such permission to continue as a conditioned student be granted.



## ADMISSION AS SPECIAL STUDENTS

Persons over twenty-one years of age may be admitted as special students, provided they secure (1) the recommendation of the professor whose work they wish to take, and (2) the approval of the dean of the college concerned. They must give evidence that they possess the requisite information and ability to pursue profitably, as special students, their chosen subjects, and must meet the special requirements of the particular colleges in which they wish to enroll, as stated below.

A special student is not matriculated and must pay a tuition fee of \$7.50 a semester in addition to the regular incidental fee of \$12.00 a semester.

No one may enroll as a special student in any school or college of the University for more than two years, except by special permission, application for which must be made through the dean of the college.

A person registered as a special student in one college and desiring to take a course in another college of the University must obtain the approval of the dean of the latter college.

## SPECIAL REQUIREMENTS OF PARTICULAR COLLEGES

*The College of Literature and Arts* requires a written application, accompanied by official certificates, indicating the character and extent of the applicant's preparatory work, and showing honorable dismissal from the school last attended. In order that action may be taken on such applications before registration they should be presented at least one week before the beginning of the semester.

*The College of Engineering* requires that applicants for admission as special students shall satisfy the entrance requirements in mathematics and English (one and one-half years of algebra, one year of plane geometry, one-half year of solid geometry, one year of English composition, and two years of English literature).

*The College of Agriculture* will receive, in the school year 1913-1914, non-matriculants twenty years old or over, provided that if deficient in English as measured by the requirements for matriculation they shall arrange to carry English as one subject until that deficiency is made good; and provided further, in the case of men, that they shall have had at least two years of experience in practical agriculture. *Beginning in September, 1914, the age limit for special students in the College of Agriculture will be raised to twenty-one years.*

*The Library School* requires a written application, accompanied by official certificates, indicating the character and extent of the applicant's preparatory and college work and showing honorable dismissal from the institution last attended. In order that action may be taken on such applications before registration they should be presented not later than one week before the beginning of the academic year.

It is the practice of this School to admit as special students only those mature persons who, though unable to meet the formal requirements for entrance, are substantially prepared for thorough and advanced work. Such persons must present evidence of possessing the requisite information and ability to pursue the chosen subjects profitably, and some substitute for the regular requirements for entrance, such as approved library or teaching experience, foreign travel, etc. Preference will be given to those already engaged in library work, especially in Illinois, who may desire more adequate training in particular subjects.

#### ADMISSION TO ADVANCED STANDING

After matriculation, an applicant may secure advanced standing either by examination or by transfer of credits.

1. *By examination.*—Advanced standing is granted only by examination unless the applicant is from an approved school.

2. *By transfer of credits.*—Credits may be accepted for advanced standing from another university or college of recognized standing, from a state normal school, or from an accredited high school (not more than the equivalent of one unit unless the high school course exceeded four years in length). An applicant for advanced standing by transfer must present a certified record of work done in the institution from which he comes, accompanied (except in cases of transfer from high schools) by a letter of honorable dismissal. Students intending to transfer to the University of Illinois should send their credentials to the Registrar as early in the summer as possible.

#### PROGRAMS OF UNIVERSITY ENTRANCE EXAMINATIONS

The University entrance examinations are given at the University in Urbana (in Room 228, Natural History Building) three times in each year: in September, immediately before the opening of the

fall semester; in January, shortly before the opening of the spring semester; and in July, during the Summer Session.

The scope of these examinations is indicated in the "Description of Subjects Accepted for Admission," pages 94 to 103.

Admission to the examinations is by permit. Permits may be obtained of the Registrar, 321 Natural History Building.

#### SUMMER EXAMINATIONS, JUNE, JULY, 1913

*Zoology, $\frac{1}{2}$ unit, or 1 unit.....	Sat., June 28,	8:00 a.m.
*Botany, $\frac{1}{2}$ unit, or 1 unit.....	Sat., June 28,	10:00 a.m.
*Chemistry, 1 unit.....	Sat., June 28,	1:00 p.m.
†Physiology, $\frac{1}{2}$ unit, or 1 unit.....	Sat., June 28,	3:30 p.m.
English literature, 2 units.....	Sat., July 5,	8:00 a.m.
English composition, 1 unit.....	Sat., July 5,	10:30 a.m.
*Physics, 1 unit.....	Sat., July 5,	1:00 p.m.
†Physical geography, $\frac{1}{2}$ unit, or 1 unit.....	Sat., July 5,	3:30 p.m.
Commercial geography, $\frac{1}{2}$ unit.....	Sat., July 5,	3:30 p.m.
‡History, 1, 2, or 3 units.....	Sat., July 12,	8:00 a.m.
Civics, $\frac{1}{2}$ unit, or 1 unit.....	Sat., July 12,	1:00 p.m.
Economics, $\frac{1}{2}$ unit.....	Sat., July 12,	3:30 p.m.
Algebra, $1\frac{1}{2}$ units.....	Sat., July 19,	8:00 a.m.
Astronomy, $\frac{1}{2}$ unit.....	Sat., July 19,	10:30 a.m.
Geology, $\frac{1}{2}$ unit, or 1 unit.....	Sat., July 19,	10:30 a.m.
Plane geometry, 1 unit.....	Sat., July 19,	1:00 p.m.
Solid and spherical geometry, $\frac{1}{2}$ unit.....	Sat., July 19,	3:30 p.m.
Latin, 1, 2, 3, or 4 units.....	Sat., July 26,	8:00 a.m.
Bookkeeping, 1 unit.....	Sat., July 26,	10:30 a.m.
Trigonometry, $\frac{1}{2}$ unit.....	Sat., July 26,	10:30 a.m.
German, 1, 2, 3, or 4 units.....	Sat., July 26,	1:00 p.m.
French, 1, 2, 3, or 4 units.....	Sat., July 26,	1:00 p.m.
Spanish, 1 unit, or 2 units.....	Sat., July 26,	1:00 p.m.
Business law, $\frac{1}{2}$ unit.....	Sat., July 26,	3:30 p.m.

The time for examinations in agriculture, domestic science, manual training, freehand or mechanical drawing, Greek, and the fourth unit in English, will be arranged with candidates.

\*Note-book required.

†Note-book required for 1 unit; not required for  $\frac{1}{2}$  unit.

‡Three units may be offered in history, made up from the following: Ancient history to 800 A. D., 1 unit; medieval and modern history, 1 unit; English history,  $\frac{1}{2}$  unit, or 1 unit; American history,  $\frac{1}{2}$  unit, or 1 unit.

## FALL EXAMINATIONS, SEPTEMBER, 1913

*Chemistry, 1 unit.....	Mon., Sept. 15,	1:00 p.m.
Geology, $\frac{1}{2}$ unit or 1 unit.....	Mon., Sept. 15,	1:00 p.m.
Astronomy, $\frac{1}{2}$ unit.....	Mon., Sept. 15,	3:30 p.m.
Trigonometry, $\frac{1}{2}$ unit.....	Mon., Sept. 15,	3:30 p.m.
‡History, 1, 2, or 3 units.....	Tues., Sept. 16,	8:00 a.m.
English literature, 2 units.....	Tues., Sept. 16,	1:00 p.m.
English composition, 1 unit.....	Tues., Sept. 16,	3:30 p.m.
Latin, 1st unit, or 2nd unit, or both.....	Wed., Sept. 17,	8:00 a.m.
*Physics, 1 unit.....	Wed., Sept. 17,	8:00 a.m.
†Physical geography, $\frac{1}{2}$ unit or 1 unit.....	Wed., Sept. 17,	10:30 a.m.
Algebra, $1\frac{1}{2}$ units.....	Wed., Sept. 17,	1:00 p.m.
Civics, $\frac{1}{2}$ unit or 1 unit.....	Wed., Sept. 17,	3:30 p.m.
Economics, $\frac{1}{2}$ unit.....	Wed., Sept. 17,	3:30 p.m.
Geometry, plane, 1 unit.....	Thurs., Sept. 18,	8:00 a.m.
Geometry, solid and spherical, $\frac{1}{2}$ unit....	Thurs., Sept. 18,	10:30 a.m.
†Physiology, $\frac{1}{2}$ unit or 1 unit.....	Thurs., Sept. 18,	10:30 a.m.
German, 1st unit, or 2nd unit, or both....	Thurs., Sept. 18,	1:00 p.m.
German, 3rd unit, or 4th unit, or both....	Thurs., Sept. 18,	3:30 p.m.
French, 1st unit, or 2nd unit, or both....	Thurs., Sept. 18,	1:00 p.m.
French, 3rd unit, or 4th unit, or both....	Thurs., Sept. 18,	3:30 p.m.
Spanish, 1st unit, or 2nd unit, or both....	Thurs., Sept. 18,	1:00 p.m.
Business law, $\frac{1}{2}$ unit.....	Thurs., Sept. 18,	1:00 p.m.
Commercial geography, $\frac{1}{2}$ unit.....	Thurs., Sept. 18,	3:30 p.m.
Latin, 3rd unit, or 4th unit, or both.....	Fri., Sept. 19,	8:00 a.m.
Bookkeeping, 1 unit.....	Fri., Sept. 19,	8:00 a.m.
*Botany, $\frac{1}{2}$ unit or 1 unit.....	Fri., Sept. 19,	8:00 a.m.
*Zoology, $\frac{1}{2}$ unit or 1 unit.....	Fri., Sept. 19,	10:30 a.m.

The time for examinations in agriculture, domestic science, manual training, freehand or mechanical drawing, Greek, and the fourth unit in English, will be arranged with applicants.

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\*Note-book required.

†Note-book required for 1 unit; not required for  $\frac{1}{2}$  unit.

‡Three units may be offered in history, made up from the following: Ancient history to 800 A. D., 1 unit; medieval and modern history, 1 unit; English history,  $\frac{1}{2}$  unit, or 1 unit; American history,  $\frac{1}{2}$  unit, or 1 unit.

## MID-YEAR EXAMINATIONS, JANUARY, 1914

*Chemistry, 1 unit.....	Mon., Jan. 5,	8:00 a.m.
Geology, $\frac{1}{2}$ unit or 1 unit.....	Mon., Jan. 5,	8:00 a.m.
Astronomy, $\frac{1}{2}$ unit.....	Mon., Jan. 5,	10:30 a.m.
Trigonometry, $\frac{1}{2}$ unit.....	Mon., Jan. 5,	10:30 a.m.
‡History, 1, 2, or 3 units.....	Mon., Jan. 5,	1:00 p.m.
English literature, 2 units.....	Sat., Jan. 10,	8:00 a.m.
English composition, 1 unit.....	Sat., Jan. 10,	10:30 a.m.
Latin, 1st unit, or 2nd unit, or both.....	Sat., Jan. 10,	1:00 p.m.
*Physics, 1 unit.....	Sat., Jan. 10,	1:00 p.m.
†Physical geography, $\frac{1}{2}$ unit or 1 unit.....	Sat., Jan. 10,	3:30 p.m.
Algebra, $1\frac{1}{2}$ units.....	Sat., Jan. 17,	8:00 a.m.
Civics, $\frac{1}{2}$ unit or 1 unit.....	Sat., Jan. 17,	10:30 a.m.
Economics, $\frac{1}{2}$ unit.....	Sat., Jan. 17,	10:30 a.m.
Geometry, plane, 1 unit.....	Sat., Jan. 17,	1:00 p.m.
Geometry, solid and spherical, $\frac{1}{2}$ unit.....	Sat., Jan. 17,	3:30 p.m.
†Physiology, $\frac{1}{2}$ unit or 1 unit.....	Sat., Jan. 17,	3:30 p.m.
German, 1st unit, or 2nd unit, or both.....	Sat., Jan. 24,	8:00 a.m.
German, 3rd unit, or 4th unit, or both.....	Sat., Jan. 24,	10:30 a.m.
French, 1st unit, or 2nd unit, or both.....	Sat., Jan. 24,	8:00 a.m.
French, 3rd unit, or 4th unit, or both.....	Sat., Jan. 24,	10:30 a.m.
Spanish, 1st unit, or 2nd unit, or both.....	Sat., Jan. 24,	8:00 a.m.
Business law, $\frac{1}{2}$ unit.....	Sat., Jan. 24,	8:00 a.m.
Commercial geography, $\frac{1}{2}$ unit.....	Sat., Jan. 24,	10:30 a.m.
Latin, 3rd unit, or 4th unit, or both.....	Sat., Jan. 24,	1:00 p.m.
Bookkeeping, 1 unit.....	Sat., Jan. 24,	1:00 p.m.
*Botany, $\frac{1}{2}$ unit or 1 unit.....	Sat., Jan. 24,	1:00 p.m.
*Zoology, $\frac{1}{2}$ unit or 1 unit.....	Sat., Jan. 24,	3:30 p.m.

The time for examinations in agriculture, domestic science, manual training, freehand or mechanical drawing, Greek, and the fourth unit in English, will be arranged with applicants.

\*Note-book required.

†Note-book required for 1 unit; not required for  $\frac{1}{2}$  unit.

‡Three units may be offered in history, made up from the following: Ancient history to 800 A. D., 1 unit; medieval and modern history, 1 unit; English history,  $\frac{1}{2}$  unit, or 1 unit; American history,  $\frac{1}{2}$  unit, or 1 unit.

## LIST OF ACCREDITED SCHOOLS

[Correct to January 1, 1913]

The following high schools, having all the *prescribed* units, and enough others to make up the *required total* of 15 units, are in the list of fully accredited schools.

Not all of these schools, however, are accredited for the same amount of work, nor all for the same subjects. A student presenting a certificate from any one of these schools will be given entrance credit for all the subjects named therein *for which the said school is specifically accredited, as shown in the certificate of its accredited relation issued by the University.*

The High School Visitor of the University inspects high schools not previously accredited upon request, if the request is accompanied by a report of the school which shows that it merits such inspection. The University accredits all work which is thus found to be sufficiently well done. For further particulars address THE HIGH SCHOOL VISITOR, in care of the University of Illinois.

## FULLY ACCREDITED SCHOOLS

SCHOOL	SUPERINTENDENT	PRINCIPAL
ABINGDON	A. C. BUTLER	W. B. ROSE
ALBION	LEWIS OGILVIE	LEE V. MATHENY
ALEDO	F. N. TAYLOR	
ALTAMONT	WILLIAM HARRIS	WILLIAM HARRIS
ALTON	R. A. HAIGHT	B. C. RICHARDSON
AMBOY	GEORGE W. BEATTIE	M. GRACE CAVINS
ANNA	F. C. PROWDLEY	CHARLES MCGINNIS
ARCOLA	SHELDON R. ALLEN	INA L. RABB
ARISPIE-INDIANTOWN ( <i>Tiskilwa</i> )		A. W. HUSSEY
ARLINGTON HEIGHTS	A. E. HUBBARD	ELEANOR CROW
ASHLAND	JAMES G. NORRIS	HARRIET MORTON
ASSUMPTION TP.		H. G. SPEAR
ASTORIA	J. R. ROWLAND	BESSIE CONDAY
ATLANTA	N. J. ROBINSON	IRA M. WRIGLEY
ATWOOD	ARTHUR W. NIEDERMEYER	O. W. ALLEN
AUBURN	CHAS. E. KUECHLER	
AUGUSTA	C. B. WHITEHOUSE	A. E. DECKER
AUGUSTANA COLLEGE ACAD. ( <i>Rock Island</i> )		C. W. FOSS
AURORA EAST	C. M. BARDWELL	C. E. LAWYER
AURORA WEST	C. E. DOUGLASS	
AVERYVILLE ( <i>Peoria P. O.</i> )	HARRY E. ILER	ERMA RELLER
BARRY	HENRY S. STICK	BERTHA WHITE

SCHOOL	SUPERINTENDENT	PRINCIPAL
BATAVIA	H. A. BONE	K. C. MERRICK
BEARDSTOWN	H. G. RUSSELL	MRS. H. G. RUSSELL
BELLEVILLE	GEORGE H. BUSIEK	H. W. BRAU
BELLFLOWER TP.		P. M. WATSON
BELVIDERE	EUGENE D. MERRIMAN	GEORGE N. BRADLEY
BEMENT	N. N. STEVENSON	H. H. STRAUCH
BENTON TP.		E. S. LAKE
BIGGSVILLE TP.		A. E. ROBINSON
BLOOMINGTON	J. K. STABLETON	WILLIAM WALLIS
BLOOM TP. ( <i>Chicago Heights</i> )		E. L. BOYER
BLUE ISLAND	J. E. LEMON	J. E. LEMON
BRADLEY POLY. INST. ( <i>Peoria</i> )		T. C. BURGESS, <i>Dir.</i>
BRIDGEPORT TP.		J. A. DAVIS
BUSHNELL	R. C. HIETT	MARY C. RASMUSSEN
CAIRO	T. C. CLENDENEN	MARGARET WILSON
CAMBRIDGE	H. M. HINKLE	MABEL GABRIELSON
CAMP POINT	W. H. BREWSTER	FLORENCE L. KOBER
CANTON	G. W. GALER	IRA P. RINKER
CARLINVILLE	H. AMBROSE PERRIN	MARGARET HUBBARD
CARLYLE	M. N. TODD	CLYDE D. HARRIS
CARMI	JOSEPH GERSCHBACHER	CHAS. MOSSBERGER
CARROLLTON	E. A. DOOLITTLE	WM. J. EATON
CARTERVILLE	R. G. CRISENBERRY	L. L. JONES
CARTHAGE	D. H. WELLS	A. M. WILSON
CARTHAGE COLLEGE ACADEMY		H. D. HOOVER, <i>Pres.</i>
CASEY	W. G. THOMPSON	W. PAUL WYATT
CATLIN	J. E. LUNG	
CENTRALIA TP.		ESTON V. TUBBS
CHAMPAIGN	W. W. EARNEST	LOTTIE SWITZER
CHARLESTON	DEWITT ELWOOD	LESTER R. MCCARTY
CHATSWORTH	L. C. SMITH	EDNA WHITE
CHENOA	A. B. HIETT	MAUDE FAIRFIELD
CHESTER	S. E. REECHER	J. L. BOWMAN
CHICAGO	ELLA FLAGG YOUNG	
AUSTIN		GOE. H. ROCKWOOD
BOWEN		CHAS. I. PARKER
CALUMET		AVON S. HALL
CARL SCHURZ		WALTER F. SLOCUM
CRANE, R. T. ( <i>Tech.</i> )		W. J. BARTHOLF
CURTIS		THOS. G. HILL
ENGLEWOOD		JAS. E. ARMSTRONG
HYDE PARK		HIRAM B. LOOMIS
LAKE		EDWARD F. STEARNS
LAKE VIEW		BENJ. F. BUCK
LANE TECHNICAL		W. J. BOGAN
McKINLEY		GEO. M. CLAYBERG
MARSHALL		LOUIS J. BLOCK
MEDILL		ALBERT A. SABIN
TULEY		FRANKLIN P. FISK
WALLER, ROBERT A.		OLIVER S. WESTCOTT
WENDELL PHILLIPS		SPENCER R. SMITH
CHICAGO LATIN SCHOOL		R. P. BATES
CHILLICOTHE TP.		CHAS. C. DICKMAN
CHRISMAN	C. S. MONTTOOTH	HELEN BOOKER
CLAYTON	J. W. MORGAN	J. W. MORGAN

## General Information

SCHOOL	SUPERINTENDENT	PRINCIPAL
CLINTON	H. H. EDMUNDS	J. D. KNIGHT
COLFAX	P. M. HOKE	LIDA J. SMITH
COLLINSVILLE TP.		A. E. ARENDT
CRYSTAL LAKE	H. A. DEAN	ELIZABETH HUGHES
DALLAS CITY	T. J. HANEY	ELSIE H. GIESE
DANVILLE	L. H. GRIFFITH	A. W. SMALLEY
DECATUR	H. B. WILSON	JESSE H. NEWLON
DEERFIELD TP. ( <i>Highland Park</i> )		R. L. SANDWICK
DEKALB TP.		F. M. GILES
DELAVAN	R. W. BARDWELL	M. P. COWDIN
DIXON	W. R. SNYDER	CHAS. H. ANDERSON
DIXON NORTH	H. V. BALDWIN	MABEL PROCTOR
DOWNER'S GROVE	G. C. BUTLER	M. MAUDE MANLEY
DRUMMER TP. ( <i>Gibson City</i> )		B. L. PILCHER
DRURY ACADEMY ( <i>Aledo</i> )		FRANK CLARE ENGLISH, <i>Pres.</i>
DUNDEE	E. C. FISHER	EDNA BEERS
DUQUOIN TP.		C. W. HOUK
DWIGHT	C. A. BROTHERS	OMAR ROOSA
EARLVILLE	F. L. BENNETT	NELLIE L. SMITH
EAST ST. LOUIS	D. WALTER POTTS	H. J. ALVIS
EDWARDSVILLE	CHAS. F. FORD	E. IRVING BELOTE
EFFINGHAM	L. W. CHATHAM	C. H. PFINGST
ELDORADO TP.		MARTIN T. VANCLEVE
ELGIN	ROBERT I. WHITE	W. L. GOBLE
ELGIN ACADEMY		LOYD S. RULAND
ELIZABETH	R. I. LEWIS	HELEN N. TORRENCE
ELMHURST	GUY CANTWELL	JOHN C. HOSKINSON
ELMWOOD	C. C. CONDIT	HARRIET ERLBACHER
ELPASO	C. H. BRITTIN	ISABEL M. VANDERVORT
EVANGELICAL PROSEMINAR ( <i>Elmhurst</i> )		DANIEL IRION, <i>Dir.</i>
EVANSTON TP.		W. F. BEARDSLEY
EVANSTON ACADEMY		N. W. HELM
FAIRBURY	E. W. POWERS	MYRTLE STAFFORD
FAIRFIELD	C. H. WILSON	H. D. WILLARD
FARMER CITY TP.		JOHN E. DEMMER
FARMINGTON	H. L. DYAR	ESTHER HEDQUIST
FERRY HALL ( <i>Lake Forest</i> )		FRANCES LAURA HUGHES
FORREST	H. H. BAUMGARDNER	MAUDE SHUTT
FRANCES SHIMER ACADEMY ( <i>Mt. Carroll</i> )		WM. P. MCKEE, <i>Dean</i>
FRANCIS W. PARKER SCHOOL ( <i>Chicago</i> )		FLORA J. COOKE
FREEPORT	S. E. RAINES	L. A. FULWIDER
FULTON	HARRY B. PRICE	PEARL B. FLATT
GALENA	E. G. MASON	KATHARINE OBYE
GALESBURG	W. L. STEELE	A. W. WILLIS
GALVA	F. U. WHITE	LILLIE R. PAISLEY
GENESEO COLLEGIATE INST		F. E. RICE, <i>Pres.</i>
GENESEO TP.		A. J. BEATTY
GENEVA	H. M. COULTRAP	LESTER S. PARKER
GENOA	B. F. KEPNER	ADDIE M. WHITE
GEORGETOWN TP.	O. P. REES	ELIZABETH HOLADAY
GILMAN	JOHN C. REEDER	MABEL L. MILLER
GRAND PRAIRIE SEM. ( <i>Onarga</i> )		H. H. FROST, <i>Pres.</i>
GRANITE CITY	L. P. FROHARDT	PERRY H. HILES
GREENFIELD	L. W. RAGLAND	A. C. REESE



SCHOOL	SUPERINTENDENT	PRINCIPAL
GREENVIEW	J. P. SCHEID	HAZEL ALKIN
GREENVILLE	S. S. SIMPSON	MAMIE E. GRAFF
GRIGGSVILLE	W. L. HAGAN	ROBERTA AMRINE
HAMILTON	J. A. JOHNSTON	PHILENA CLARKE
HARRISBURG Tp.		HARRY TAYLOR
HARTER-STANFORD Tp. ( <i>Flora</i> )		O. A. TOWNS
HARVARD	J. H. LIGHT	J. E. ALMON
HARVARD SCHOOL ( <i>Chicago</i> )		J. J. SCHOBINGER
HAVANA	T. S. HENRY	MRS. SARA E. PIERCE
HENRY	W. E. KING	PHILLIPINE MARIE PFAFF
HERRIN Tp.	P. H. HELLYAR	T. H. SCHUTTE
HEYWORTH	L. R. BLOHM	ETHEL L. HARPOLE
HIGHLAND	C. L. DIETZ	PEARL T. BROWN
HILLSBORO	H. L. COX	HARRY J. BECKEMEYER
HINSDALE	H. B. FISHER	REX TRABUE
HITTLE Tp. ( <i>Armington</i> )		EUNICE BLACKBURN
HOMER	W. D. MADDEN	GLEN C. HICKLE
HOPESTON	S. K. McDOWELL	HELEN A. MILLS
HUME	T. A. GALLAHER	D. FRANK FLEMING
ILLIOPOLIS	W. P. SULLIVAN	ZETA JACKSON
ILLINOIS WOMAN'S COL. ACAD. ( <i>Jacksonville</i> )		JOS. R. HARKER, <i>Pres.</i>
INDUSTRY Tp.		ROBERT D. HILL
JACKSONVILLE	W. A. FURN	ADOLPH GORE
JENNINGS SEMINARY ( <i>Aurora</i> )		BERTHA A. BARBER
JERSEYVILLE	J. PIKE	JOHN A. EGELHOFF
JOHN SWANEY SCHOOL ( <i>McNabb</i> )		LEE O. YODER
JOLIET Tp.		J. STANLEY BROWN
J. STERLING MORTON Tp. ( <i>Clyde</i> )		H. V. CHURCH
KANKAKEE	F. N. TRACY	C. H. KINGMAN
KANSAS	R. B. HENLEY	NEVA B. WILEY
KENWOOD INSTITUTE ( <i>Chicago</i> )		MRS. STELLA DYER-LORING
Kewanee	R. G. JONES	W. S. BROOKS
KINMUNDY	E. V. LATHAM	EMMA M. BRYAN
KNOXVILLE	G. G. LAFFERTY	SYLVIA E. SMITH
LAHARPE	T. W. EVERITT	MRS. NELLE CONRADY
LAKE FOREST ACADEMY		W. M. LEWIS
LANARK	O. W. HOFFMAN	OLIVE ELLIS
LaSALLE-PERU Tp. ( <i>LaSalle</i> )		T. J. MCCORMACK
LAWRENCEVILLE Tp.		F. W. COX
LENA	F. P. DORMER	ELSIE ENGLISH
LEROY	H. H. KIRKPATRICK	A. B. KORB
LEWISTOWN	M. N. BEEMAN	ALICE VOEGELEIN
LEXINGTON	J. H. SMITH	THEODORE F. FIEKER
LIBERTYVILLE	V. W. BURRIS	LOUISE CATER
LINCOLN	ANTHONY MIDDLETON	A. F. TRAMS
LITCHFIELD	WILLIAM HAWKES	D. B. CARROLL
LOCKPORT Tp.		G. R. SWAIN
LODA	CHAS. C. STRICKLAND	MARIE E. WALLIN
LOVINGTON Tp.		O. C. BAILEY
LYONS Tp. ( <i>LaGrange</i> )		RALPH W. PRINGLE
McLEANSBORO	W. C. FAIRWEATHER	L. G. HICKMAN
MACOMB	T. M. BIRNEY	E. L. KING
MADISON	LOUIS BAER	HENRY H. JANSSEN
MAINE Tp. ( <i>DesPlaines</i> )		CHAS. S. STEWART
MANSFIELD	J. A. ALEXANDER	MABEL E. WILLIAMS

## General Information

SCHOOL	SUPERINTENDENT	PRINCIPAL
MARENGO	ALBERT REEP	HENRY PECKMAN
MARION Tp.		E. G. LENTZ
MARISSA Tp.		ROY JORDAN
MARSEILLES	E. A. COLLINS	ELINORE A. BATES
MARSHALL Tp.		LEWIS W. WILLIAMS
MARTINSVILLE	HAROLD BRIGHT	HARRY L. RYAN
MASON CITY	G. A. BUZZARD	L. B. CURRY
MATTOON	G. P. RANDLE	J. F. WILEY
MAZON Tp.		E. C. SHIELDS
MENDON	R. N. MALCOMSON	HAZEL MCCREARY
MENDOTA	J. H. BROWNING	LILLIAN A. PURKHISER
METROPOLIS	M. N. MCCARTNEY	HAROLD J. MOORE
MILFORD Tp.	H. W. MCCULLOCH	M. F. LUMMIS
MINONK	B. R. MORRIS	MARIE JEMSEN
MOLINE	C. H. MAXSON	E. P. NUTTING
MOMENCE	R. J. WALTERS	E. E. ROBBINS
MONMOUTH	CHAS. E. JOINER	MARY FINDLEY
MONTICELLO	A. W. GROSS	MYRTLE CRUZON
MONTICELLO SEMINARY ( <i>Godfrey</i> )		MARTINA C. ERICKSON
MORGAN PARK ACADEMY		HARRY D. ABELLS
MORGAN PARK Tp.		J. H. HIEL
MORRIS	E. D. MARTIN	L. C. ROBEY
MORRISON	W. E. WEAVER	MARY L. BARNES
MORTON Tp.		T. L. COOK
Mt. CARMEL	A. S. ANDERSON	HARRIET BERNINGER
Mt. CARROLL	G. V. CLUM	GAYLE H. AU
Mt. STERLING	M. L. TEST	AGNES M. GUNTHER
Mt. VERNON Tp.		JAS. M. DICKSON
MOWEAQUA	C. W. YERKES	MYRTLE GREGORY
MURPHYSBORO Tp.		G. J. KOONS
NAPERVILLE	O. A. WATERMAN	V. BLANCHE GRAHAM
NASHVILLE	J. M. AVERY	J. K. SKINNER
NEOGA Tp.		DEAN M. INMAN
NEWMAN Tp.		J. H. TRINKLE
NEWTON	C. E. GIRHARD	J. H. PURSIFULL
NEW TRIER Tp. ( <i>Kenilworth</i> )		H. E. BROWN
NOKOMIS	HENRY BUELLSFIELD	NELLIE SEEGAR
NORMAL	E. W. DAVIS	W. A. GOODIER
NORTH PARK COL. ACAD. ( <i>Chicago</i> )		C. J. WILSON
NORTHWESTERN COLLEGE ACADEMY ( <i>Naperville</i> )		THOMAS FINKBEINER
NORTHWESTERN MILITARY ACAD. ( <i>Highland Park</i> )		COL. H. P. DAVIDSON
OAKLAND	G. W. SUTTON	BESSIE GALLAHER
OAK PARK & RIVER FOREST Tp. ( <i>Oak Park</i> )		J. CALVIN HANNA
OBLONG	ROSCOE R. SMITH	J. M. WATERS
ODELL	V. T. SMITH	HELEN M. LYONS
OLNEY	H. W. HOSTETTLER	B. Y. ALVIS
ONARGA	S. E. LEMARR	M. C. CLEVINGER
OREGON	F. G. TAYLOR	
OTTAWA Tp.		W. F. MOZIER
PALESTINE	H. B. URBAN	R. A. FRALEY
PANA Tp.		W. E. ANDREWS
PARIS	T. W. B. EVERHART	T. J. BEECHER
PAWNEE Tp.		J. O. STANBERRY
PAWPAW	W. C. SUFT	JULIA H. SUFT
PAXTON	O. J. BAINUM	HARRY LATHROP

SCHOOL	SUPERINTENDENT	PRINCIPAL
PEKIN	J. J. CROSBY	WM. F. SHIRLEY
PEORIA		
CENTRAL	GERARD T. SMITH	A. W. BEASLEY
MANUAL TRAINING	GERARD T. SMITH	WM. BROWN
PETERSBURG	H. A. PAINE	CHAS. C. FOLEY
PITTSFIELD	O. H. BLOSSOM	NELLIE A. MOORE
PLAINFIELD	L. H. DARLINE	EVELYN B. WINBOLT
PLANO	R. E. LOCKE	W. S. POPE
POLO	C. F. MILLER	MARY C. STRICKLER
PONTIAC TP.		ARTHUR VERNER
PRINCETON TP.		W. R. SPURRIER
PROPHETSTOWN	W. F. STEWART	RICHARD H. WOLFE
PROVISO TP. ( <i>Maywood</i> )		JOHN E. WITMER
QUINCY	E. G. BAWMAN	S. W. EHRLMAN
RANTOUL	E. H. MILLER	JESSIE MCHARRY
RIDGEFARM	LOUIS A. TOHILL	J. FRANCES DODGE
RIVERSIDE	A. F. AMES	T. H. ZIEGLER
ROBINSON TP.		J. O. MARBERRY
ROCHELLE	LEWIS A. MAHONEY	T. R. JOHNSTON
ROCK FALLS	E. O. PHARES	LULU A. MILLER
ROCKFORD	P. R. WALKER	C. P. BRIGGS
ROCK ISLAND	H. B. HAYDEN	A. J. BURTON
ROODHOUSE	HARVEY T. WHITE	AUGUST W. HUBER
ROSEVILLE TP.		H. L. KESSLER
ROSSVILLE	I. A. SMOTHERS	E. G. ABBOTT
RUSHVILLE	CHAS. E. KNAPP	LAURA L. KNOWLES
RUTLAND	W. E. GUTTERIDGE	EDITH SCHRODER
ST. CHARLES	FAITH MCAULEY	FRANCES ADAMS
ST. ELMO	R. W. JENNINGS	DEAN PARRILL
ST. MARY'S ACADEMY ( <i>Quincy</i> )		MOTHER MARY MAGDALEN
SALEM	M. A. THRASHER	E. G. LEANDER
SANDWICH	W. W. WOODBURY	MAUD WEBSTER
SAVANNA TP.		F. T. GOODIER
SAYBROOK	L. F. FULWILER	HOWARD BARCLAY
SHEFFIELD	J. H. MARTIN	LAURA SCHOETTLER
SHELBYVILLE	A. F. LYLE	J. T. DORRIS
SHELDON	F. L. HOLCH	I. R. BERKEMA
SIDELL TP.		SHERMAN CASS
SOUTHERN COLLEGIATE INST. ( <i>Albion</i> )		FRANK B. HINES, <i>Pres.</i>
SPARTA	F. C. SCOTT	ST. JOHN W. WILTON
SPRINGFIELD	J. H. COLLINS	F. D. THOMSON
STANFORD	B. T. ADKINS	LILLY STIEGETMEIER
STAUNTON	WM. E. ECCLES	ELLEN A. MUIR
STERLING TP.		E. T. AUSTIN
STOCKLAND TP.		H. M. THRASHER
STOCKTON	MYRTLE RENWICK	PARKER NOLL
STONINGTON	G. E. LOWRY	GAIL REBMAN
STREATOR TP.		O. A. RAWLINS
SULLIVAN	T. H. FINLEY	CLARA SINCLAIR
SYCAMORE	K. D. WALDO	GRACE M. EDWARDS
TAYLORVILLE TP.		R. G. BEALS
THORNTON TP. ( <i>Harvey</i> )		L. W. SMITH
TOULON TP.	J. T. KIRK	C. E. GRIFFITH
TUSCOLA	STANLEY MORRIS	CARSON H. BEANE
UNIVERSITY HIGH SCHOOL ( <i>Chicago</i> )		F. W. JOHNSON

## General Information

SCHOOL	SUPERINTENDENT	PRINCIPAL
URBANA	A. P. JOHNSON	M. L. FLANINGAM
UNION ACADEMY ( <i>Anna</i> )		FRED W. MCCLUSKY
URSULINE ACADEMY ( <i>Springfield</i> )		MOTHER PAUL
VANDALIA	D. B. FAGER	HARRY L. TATE
VERMILLION ACADEMY ( <i>Vermilion Grove</i> )		EDITH C. SHUGART
VILLA DE CHANTAL ( <i>Rock Island</i> )		MOTHER F. BORGIA
VIRDEN	P. M. SILLOWAY	CLARENCE C. COOL
VIRGINIA	A. M. SANTEE	LAURA MASON
WALNUT	T. F. McLAMARRAH	J. G. DEININGER
WARREN	O. E. TAYLOR	OLIVET BUSER
WASHBURN	H. A. RITCHER	OLGA E. SEEWALD
WASHINGTON	P. M. SMITH	IRA DINGLEDINE
WATERLOO	JAMES E. RAIBOURN	KARL W. MITCHELL
WATSEKA	L. W. HAVILAND	MARY J. LAYCOCK
WAUKEGAN TP.		W. C. KNOELK
WENONA	E. F. NICHOLS	FRED H. COX
WEST CHICAGO	L. A. RISNER	NORMA CONYNE
W. ILL. ST. NORMAL ACAD. ( <i>Macomb</i> )		W. P. MORGAN
WESTERN MIL. ACADEMY ( <i>Upper Alton</i> )	A. M. JACKSON	F. ENGELHARDT
WESTFIELD COL. ACAD.		J. C. MORGAN
WHEATON		ELLEN M. GREGG
WHEATON COL. ACAD.	J. B. RUSSELL	W. S. PEMBERTON
WHIPPLE ACADEMY ( <i>Jacksonville</i> )		SAMUEL O. WELDAY
WHITE HALL	HEYWOOD COFFIELD	
WILMINGTON	W. H. HUGHES	BERTHA ELDRD
WINCHESTER	J. B. HENDRICKS	BERTHA C. DUERKOP
WOODSTOCK	E. C. THOMAS	W. E. EVANS
WYOMING	C. I. MARTIN	MARY DUNN
YORKVILLE	L. G. YENERICH	MRS. RACHEL GRIMWOOD

## PARTIALLY ACCREDITED SCHOOLS

KEITHSBURG	E. A. HUFF	D. D. McRuer
RAYMOND	W. F. GROTTs	MAY HEFLIN
ST. ALBAN'S SCHOOL ( <i>Knoxville</i> )		LUCIAN F. SENNETT

## DESCRIPTION OF SUBJECTS ACCEPTED FOR ADMISSION

The amount of work in each of the foregoing subjects which corresponds to the minimum number of credits assigned is shown by the description of subjects below.

AGRICULTURE.—Courses in agriculture should be arranged for periods of not less than 36 weeks. Such a course may be accepted for one unit of entrance credit, and two such courses may be accepted for two units, provided the work covered by each course is so closely related in its parts as to constitute one of the generally accepted divisions now recognized in agricultural work. At least one-half the time should be devoted to laboratory work, and notebooks should be presented.

2. **ALGEBRA.**—Fundamental operations, factoring, fractions, simple equations, involution, evolution, radicals, quadratic equations and equations reducible to the quadratic form, surds, theory of exponents, and the analysis and solution of problems involving these.

3. **ASTRONOMY.**—In addition to a knowledge of the descriptive matter in a good text-book, there must be some practical familiarity with the geography of the heavens, with the various celestial motions, and with the positions of the conspicuous naked-eye heavenly bodies.

4. **BOOK-KEEPING.**—The unit of work in book-keeping for college entrance should consist of a working knowledge for both single and double entry book-keeping for the usual lines of business. The student should be able to change his books from single to double entry and from individual to proprietorship. At least one set of transactions should be kept by single entry and at least two sets by double entry in which the uses of the ordinary book-keeping books and commercial papers should be involved. The student should be drilled in the making of profit and loss statements and of balance sheets and should be able to explain the meanings of the items involved in both kinds of instruments. The work should be done under the immediate supervision of a teacher and the student should devote at least ten periods of not less than forty minutes full time in class each week for one academic year.

5. **BOTANY.**—A familiar acquaintance with the general structure of plants, and of the principal organs and their functions, derived to a considerable extent from a study of the objects, is required; also a general knowledge of the main groups of plants; and the ability to classify and name the more common species. Laboratory note-books and herbarium collections should be presented.

6. **BUSINESS LAW.**—The amount of business law which is accepted is indicated by the ground covered in any of the ordinary text-books on the subject, such as Spencer's *Elements of Commercial Law*, Burdick's *Business Law*, and White's *Elements of Commercial Law*.

7. **CHEMISTRY.**—The instruction must include both text-book and laboratory work. The work should be so arranged that at least one-half of the time shall be given to the laboratory. The course as it is given in the best high schools in one year will satisfy the requirements of the University for the one unit for admission. The

laboratory notes, bearing the teacher's indorsement, must be presented as evidence of the actual laboratory work accomplished. Candidates for admission may be required to demonstrate their ability by laboratory tests.

8. **CIVICS.**—Such an amount of study of the American Government, its history and interpretation, as is indicated by any of the usual high school text-books on civil government, is regarded as sufficient for one term. The work may advantageously be combined with the elements of political economy.

9. **COMMERCIAL GEOGRAPHY.**—The amount and character of the work accepted in this subject is indicated by the scope of such books as Redways' Commercial Geography, Adam's smaller book on the same subject, the text-books of Brigham, or Robinson, or Trotter's work.

10. **DOMESTIC SCIENCE.**—(a) An equivalent of 180 hours of prepared work with at least two recitation periods a week in foods. (b) An equivalent of 180 hours of prepared work with at least one recitation period a week in clothing. (c) An equivalent of 180 hours of prepared work with at least two recitation periods a week on the home. (Two periods of laboratory work are considered equivalent to one period of prepared work.) Of the foregoing, (a) will be accepted as a unit's work; or two half units taken from (a) and (b), or (a) and (c), or (b) and (c) will be accepted as a unit's work. The work is to be done by trained teachers with individual equipment, as determined by inspection.

11. **DRAWING.**—Free-hand or mechanical drawing, or both. Drawing-books or plates must be submitted. The number of credits allowed depends on the quantity and quality of the work submitted.

12. **ECONOMICS.**—The principles of economics, with economic history, as given in any good elementary text-book.

13. **ENGLISH COMPOSITION AND RHETORIC.**—Correct spelling, capitalization, punctuation, paragraphing, idiom, and definition; the elements of rhetoric. The candidate will be required to write two paragraphs of about one hundred fifty words each to test his ability to use the English language. This work counts for one unit.

14. **ENGLISH LITERATURE.**—(a) Each candidate is expected to have read certain assigned literary masterpieces, and will be subjected to such an examination as will determine whether or not he has done so. With a view to a large freedom of choice, the books provided for reading are arranged in the following groups, from

which at least ten units are to be selected, two from each group. Each unit is here set off by semicolons.

I. The Old Testament, comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther; the Iliad, with the omission, if desired, of Books XI, XIII, XIV, XV, XVII, XXI; the Odyssey, with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII; Vergil's Aeneid. The Iliad, the Odyssey, and the Aeneid should be read in English translations of recognized literary excellence.

For any unit of this group a unit from any other group may be substituted.

II. Shakespeare's Merchant of Venice; Midsummer Night's Dream; As You Like It; Twelfth Night; Henry the Fifth; Julius Caesar.

III. Defoe's Robinson Crusoe, Part I; Goldsmith's Vicar of Wakefield; either Scott's Ivanhoe or Quentin Durward; Hawthorne's House of Seven Gables; either Dickens's David Copperfield or Tale of Two Cities; Thackeray's Henry Esmond; Mrs. Gaskell's Cranford; George Eliot's Silas Marner; Stevenson's Treasure Island.

IV. Bunyan's Pilgrim's Progress, Part I; The Sir Roger de Coverley Papers in the Spectator; Franklin's Autobiography (condensed); Irving's Sketch Book; Macaulay's Essays on Lord Clive and Warren Hastings; Thackeray's English Humorists; selections from Lincoln, including the two Inaugurals, the Speeches in Independence Hall and at Gettysburg, the Last Public Address, and the Letter to Horace Greeley, with a brief memoir or estimate; Parkman's Oregon Trail; either Thoreau's Walden or selections from Huxley's Lay Sermons; Stevenson's Inland Voyage and Travels with a Donkey.

V. Palgrave's Golden Treasury (First Series), Books II and III, with especial attention to Dryden, Collins, Gray, Cowper, Burns; Gray's Elegy in a Country Churchyard and Goldsmith's Deserted Village; Coleridge's Ancient Mariner and Lowell's Vision of Sir Launfal; Scott's Lady of the Lake; Byron's Childe Harold, Canto IV, and Prisoner of Chillon; Palgrave's Golden Treasury (First Series), Book IV, with especial attention to Wordsworth, Keats, and Shelley; Poe's Raven, Longfellow's Courtship of Miles Standish, Whittier's Snow Bound; Macaulay's Lays of Ancient

Rome and Arnold's Sohrab and Rustum; Tennyson's Gareth and Lynette, Lancelot and Elaine, The Passing of Arthur; Browning's Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, Hervé Riel, Pheidippides, My Last Duchess, Up at a Villa—Down in the City.

(b) In addition to the foregoing the candidate will be required to present a careful, systematic study, with supplementary reading, of the history of either English or American literature.

(c) The candidate will be examined on the form and substance of certain books in addition to those named under (a). For 1913 the books will be selected from the list below. The examination will be of such a character as to require a minute study of each of the works named in order to pass it successfully. The list is:

Shakespeare's Macbeth; Milton's Comus, L'Allegro, and Il Penseroso; Burke's Speech on Conciliation with America, or Washington's Farewell Address and Webster's First Bunker Hill Oration; Macaulay's Life of Johnson, or Carlyle's Essay on Burns.

The work outlined in (a), (b), and (c) counts for two units.

(d) The three units in English composition, rhetoric, and literature, as described above, are required for all students. A fourth unit may be obtained for one full year's additional work in the study of English and American authors.

15. FRENCH.—*First year's work*.—Elementary grammar, with the more common irregular verbs. Careful training in pronunciation. About 100 pages of easy prose should be read.

*Second year's work*.—Advanced grammar, with all the irregular verbs. Elementary composition, and conversation. About 300 pages of modern French should be read.

*Third year's work*.—Intermediate composition, and conversation. About 500 pages of standard authors should be read, including a few classics.

*Fourth year's work*.—Advanced composition, and conversation. Standard modern and classical authors should be read and studied to the extent of 700 pages.

16. GEOLOGY.—The student must show familiarity with the principles of dynamic and structural geology, and some acquaintance with the facts of historical geology as presented in Scott's Introduction to Geology, Brigham's Text-book of Geology, or an equivalent, together with at least an equal amount of time spent in



laboratory and field work. The laboratory work should follow one or more of the lines indicated below, and note-books should be presented showing the character and amount of work done.

(a) Studies of natural phenomena occurring in the neighborhood which illustrate the principles of dynamic geology. Each study should include a careful drawing of the object and a written description of the way in which it was produced. (b) Studies of well-marked types of crystalline, metamorphic, and sedimentary rocks which will enable the student to recognize each type and state clearly the conditions under which it was formed. (c) Studies of minerals of economic value, including the characteristics of each, its origin, and the uses to which it is put. (d) Studies of the types of soil occurring in the neighborhood, including the origin of each and the cause of differences in appearance and fertility.

17. **GEOMETRY.**—(a) *Plane Geometry*. Special emphasis is placed on the ability to use propositions in the solution of original numerical exercises and of supplementary theorems.

(b) *Solid and Spherical Geometry*. Applications to the solution of original exercises are emphasized.

18. **GERMAN.**—It is recommended that pupils be trained to understand spoken German and to reproduce freely in writing and orally what has been read. Whatever method of teaching is used, however, a thorough knowledge of grammar is expected. No attempt is made in what follows to give more than a general outline for the work of successive years, but the German department welcomes inquiries from teachers who wish further suggestions in the planning of courses.

*First Year's Work.*—At the end of the year pupils should be able to read intelligently and with accurate pronunciation simple German prose, to translate it into idiomatic English, and to answer in German easy questions on the passage read. A few short poems may well be memorized. Elementary grammar should be mastered up to the subjunctive as arranged in most books for beginners. Easy prose composition rather than the writing of forms will be the test of this grammatical work in entrance examinations given by the University.

*Second Year's Work.*—Only modern writers should be read, preference being given to material which has a distinctly German atmosphere and which lends itself readily to conversational treatment in the class room. The regular recitations should afford constant

oral and written drill on the elementary grammar of the previous year. In addition, the beginner's book should be completed, but more importance is attached to accuracy and facility in simple modes of expression than to a theoretical knowledge of advanced syntax.

*Third Year's Work.*—Most of the time should still be devoted to good modern prose. There should be some work in advanced prose composition—based on German models—and the daily recitations should continue to afford abundant oral practice. Pupils ought by this time to understand spoken German fairly well.

*Fourth Year's Work.*—At the end of this year a pupil should be able to read at sight any prose or verse of moderate difficulty. He should also be able to express himself orally or in writing with considerable readiness and a high degree of accuracy. It is recommended that work in composition take the form of free reproduction of portions of the texts studied rather than translation of English selections. The reading should be divided about equally between modern and classical authors.

19. GREEK.—*First Year's Work.*—The exercises in any of the beginning books, and one book of the Anabasis or its equivalent.

*Second year's work.*—Two additional books of the Anabasis and three of Homer, or their equivalents, together with an amount of Greek prose composition equal to one exercise a week for one year.

*Third year's work.*—Three additional books of the Iliad, three of the Odyssey, and Books VI, VII, VIII of Herodotus, or an equivalent from other authors.

20. HISTORY.—One, two, or three units may be presented, to be chosen from the following list:

Ancient history to 800 A. D., one unit.

Medieval and modern history, one unit.

English history, one-half or one unit.

American history, one-half or one unit.

Examinations for entrance will be given in all these subjects. The examination for each unit is intended to cover one full year of high school work.

21. LATIN.—*First year's work.*—Such knowledge of inflections and syntax as is given in any good preparatory Latin book, together with the ability to read simple fables and stories.

*Second year's work.*—Four books of Cæsar's Gallic War, or its equivalent in Latin of equal difficulty; the ability to write simple Latin based on the text.

*Third year's work.*—Six orations of Cicero; the ability to write simple Latin based on the text; the simpler historical references and the fundamental facts of Latin syntax.

*Fourth year's work.*—Six books of Vergil, with history and mythology; the scansion of hexameter verse.

22. **MANUAL TRAINING.**—The requirement for one-half unit is the equivalent of 180 forty-minute periods in manual training following the syllabus prepared by the manual training section of the High School Conference.

23. **MUSIC.**—Credit in music is not accepted on certificate, but only by examination at the University, and only for admission to the School of Music. In the examination for two units in *piano*, students are required to play the following or the equivalent: Simple scales and arpeggios at fairly rapid tempo; scales in double octaves at a moderate speed; Bach, two-part invention; Czerny, Op. 229; an easy sonata of Haydn, Mozart, or Beethoven. In the examination for two units in *voice*, students are required to sing the following or the equivalent: Simple scales and arpeggios; studies selected from Concone, Sieber, Panofka, and Panseron; songs selected from Schubert, Schumann, and Mendelssohn. In the examination for two units in *violin*, students are required to play the following or the equivalent: Gordon's Fountain Studies; Hermann's Scale Studies; Wohlfahrt's Etudes, Book I; Kayser's Etudes; Pleyel, Duet; selections from Weiss and Blumenstengel; miscellaneous pieces by Dacla, Papini, Weidig, Sitt, etc.

24. **PHYSICS.**—One year's high school work covering the elements of physical science as presented in the best of the current high school text-books of physics. Laboratory practice in elementary quantitative experiments should accompany the text-book work. The candidate's laboratory note-book will be considered as part of the examination.

25. **PHYSICAL GEOGRAPHY.**—The amount and character of the work required may be seen by referring to the texts of Gilbert and Brigham, or Davis; the recitations must be supplemented by at least an equal amount of time devoted to laboratory work. The laboratory exercises should follow one or more lines such as are indicated below. Each student should present a note-book showing what he has done.

(a) Studies in mathematical geography in which map and scale only are used. These should embrace such topics as length of a degree in longitude in various latitudes; length and breadth of continents, etc., in degrees and miles; relative latitudes of places; distances between cities, etc., in degrees and miles; difference in length of parallels and meridians; problems in time; location of time belts, etc.

(b) Studies of local topographic features which illustrate the various phases of stream work. Each study should include a drawing or topographic map of the object, and a full, clear description of the way in which it was formed.

(c) Studies of glacial deposits as shown in terminal and ground moraines, kames, eskers, etc.; distribution of dark and light colored soils; occurrences of lakes, ponds, gravel beds, clay banks, and water-bearing strips of sand and gravel.

(d) Studies of stream work as shown in the topographical sheets which may be obtained from the United States Geological Survey at a nominal cost.

(e) Studies of the form, size, direction and rate of movement of high and low barometer areas, and the relation of these to direction of wind, character of cloud, distribution of heat, and amount of moisture in the air, as shown in the daily weather maps. Later these studies should lead to the making of weather maps from the data furnished by the daily papers, and to local prediction of weather changes based on the student's own observation.

(f) Studies of the climate of various countries compared with our own, the necessary data being derived from such topographic, rainfall, wind, current, and temperature maps as are found in Sydow-Wagner's or Longman's atlases.

26. **PHYSIOLOGY.**—For one-half unit: The anatomy, histology, and physiology of the human body and the essentials of hygiene, taught with the aid of charts and models to the extent shown in Martin's Human Body (Briefer Course). For more than one-half unit, the course must include practical laboratory work.

27. **SPANISH.**—*First year's work.*—Elementary grammar, including thorough drill in the irregular verbs; careful training in pronunciation, and translation of simple Spanish when spoken; reading of about 100 pages of easy prose; simple composition and dictation.

*Second year's work.*—In addition to the foregoing, about 300

pages of modern prose; elementary syntax; dictation, composition, and translation of spoken Spanish continued.

28. **TRIGONOMETRY.**—The work should cover the field of plane trigonometry, as given in standard text-books, including the solution of right and oblique triangles. Special emphasis is placed upon the solution of practical problems, trigonometric identities, and trigonometric equations.

29. **ZOOLOGY.**—The instruction must include laboratory work equivalent to four periods a week for a half-year, besides the time required for text-book and recitation work. Note-books and drawings must be presented to show the character of work done and the types of animals studied. The drawings are to be made from the objects themselves, not copied from illustrations, and the notes are to be a record of the student's own observations of the animals examined. The amount of equipment and the character of the surroundings must, of course, determine the nature of the work done and the kind of animals studied; but in any case the student should have at least a fairly accurate knowledge of the external anatomy of each of eight or ten animals distributed among several of the larger divisions of the animal kingdom, and should know something of their life histories and of their more obvious adaptations to environment. It is recommended that special attention be given to such facts as can be gained from a careful study of the living animal. The names of the largest divisions of the animal kingdom, with their most important distinguishing characters, and with illustrative examples selected, when practicable, from familiar forms, ought also to be known.

# GRADUATION---FIRST DEGREES

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## THE BACHELOR'S DEGREE

A bachelor's degree is conferred upon any student who satisfactorily completes the course of study described under one of the various colleges and schools, doing either the first three years, or the last year, of his work in residence at the University.

### RESIDENCE REQUIREMENT

If the student is in residence at the University for one year only, that year's work must be taken in the college from which the degree is expected. No person will be recommended for a degree by the faculty of any college in the University unless he has been a regularly registered student in that college for at least one year.

### REQUIREMENTS FOR GRADUATION

A candidate for a bachelor's degree must pass in the subjects marked *prescribed* in his chosen course, and must conform to the directions given in connection with that course in regard to electives. In the Colleges of Literature and Arts, of Science, and of Agriculture, credit for 130 hours is required for graduation. In the College of Engineering, in the College of Law, in the Library School, and in the School of Music, the candidate must complete the course of study as laid down.

### MILITARY SCIENCE AND PHYSICAL TRAINING

The number of hours required includes, for men, five in military drill and tactics and two in physical training; and for women, three in physical training. Men excused from the military requirements, and women who do not take the course in physical training, must elect instead an equivalent number of hours in other subjects.

### THESIS

In all cases in which a thesis is required,\* the subject must be announced not later than the first Monday in November, and the

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\* See requirements for graduation in the various colleges.

completed thesis must be submitted to the dean of the proper college by June 1. The work must be done under the direction of the professor in whose department the subject belongs, and must be in the line of the course of study for which a degree is expected. The thesis must be presented upon regulation paper, and is deposited in the library of the University.

#### SECOND BACHELOR'S DEGREE

A student who has already received one bachelor's degree may receive a second bachelor's degree, provided that all specified requirements for both degrees be fully met, and provided also that the course offered for the second degree include at least 30 semester hours not counted for the first degree.

#### LIST OF FIRST DEGREES

1. The degree of BACHELOR OF ARTS is conferred on those who complete a course in the College of Literature and Arts, or certain courses in the College of Science.

2. The degree of BACHELOR OF SCIENCE is conferred on those who complete a course in the College of Engineering or in the College of Agriculture. This degree is conferred on a graduate of the College of Science who completes a course in ceramics or in chemistry and may be conferred on graduates from other courses in this College on recommendation of the faculty.

3. The degree of BACHELOR OF LAWS is conferred on those who complete the course in the College of Law.

4. The degree of BACHELOR OF LIBRARY SCIENCE is conferred on those who complete the course in the Library School.

5. The degree of BACHELOR OF MUSIC is conferred on those who complete one of the courses in the School of Music.

6. The degree of GRADUATE IN PHARMACY, or of PHARMACEUTICAL CHEMIST, is conferred on those who complete the shorter and the longer courses, respectively, in the School of Pharmacy.

# HONORS AND COMPETITIONS

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## UNIVERSITY HONORS

The University gives public official recognition to such students as attain a high grade of scholarship by the following system of honors:

*Preliminary Honors* are assigned on the completion of the sophomore year. The number of persons to whom honors are awarded may not exceed one-tenth of the membership of the sophomore class. The basis of assignment is the scholarship of the student during the freshman and sophomore years. A failure disqualifies a student for receiving these honors. Preliminary Honors afford an opportunity for sophomores to secure recognition for high scholarship without waiting for graduation.

*Final Honors\** are assigned on graduation. The basis for the assignment is the scholarship of the student during the junior and senior years. Not more than one-tenth of the senior class may receive such honors. Final Honors are given to seniors in recognition of high scholarship, the terms being designed especially to favor students whose preparatory education has been so imperfect as to prevent them from receiving preliminary honors. A failure received in the junior or the senior year disqualifies a student for receiving Final Honors.

*Special Honors* are awarded at the close of the senior year. No student may receive such honors who has not completed, before the beginning of his senior year, at least twenty hours' work in the subject, or group of allied subjects, in which the honors are proposed; he must complete thirty hours' work in the same subject, or group of allied subjects, by the end of his senior year, must do such other work as the professor in charge may assign, and must prepare an acceptable thesis. No student is eligible for special honors who, during the senior year, has received a grade of less than eighty per

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\**Honors on Graduation.*—The rules governing honors on graduation in the College of Literature and Arts are stated on pages 145, 146 following. The rules given above apply to the other undergraduate colleges and schools of the University.



ment in any subject. Special honors are planned for especially brilliant students who prefer to concentrate their efforts upon a special course. A student may be a recipient of both final and special honors.

The names of students receiving honors are published in the Annual Register of the University. (See Part V.)

## DEBATING AND ORATORY

The University engages yearly in four intercollegiate debates, the teams for which are chosen in a series of competitive preliminaries to which all students are eligible. Through the generosity of Hon. William B. McKinley a gold watch-fob is presented to every speaker who represents the University, either in debate or in oratory.

THE CENTRAL DEBATING CIRCUIT OF AMERICA is an association formed by the universities of Illinois, Iowa, Minnesota, Nebraska, and Wisconsin. It holds a debate at each university on the Friday evening following the Thanksgiving recess.

THE STATE UNIVERSITY DEBATING LEAGUE consists of the state universities of Illinois, Indiana, and Ohio. Under its auspices three debates are held upon the second Friday in March, each university sending out an affirmative and a negative team.

THE NORTHERN ORATORICAL LEAGUE, consisting of Northwestern University, Oberlin College, and the state universities of Illinois, Iowa, Michigan, Minnesota, and Wisconsin, holds an annual contest on the first Friday evening in May. The contest for 1913 will be held on May 2, at Oberlin College, Oberlin, Ohio. The winner receives the Lowden testimonial of one hundred dollars, and the speaker awarded second place, fifty dollars. The Illinois representative is selected in competitive contests open to all undergraduates.

THE INTERCOLLEGIATE PEACE ASSOCIATION holds an annual state and an inter-state oratorical contest to which representatives of this University are eligible. Orations must be upon some phase of the peace question. Cash prizes are offered in the state and inter-state contests.

A FRESHMAN-SOPHOMORE DEBATE and an INTER-SOCIETY DECLAMATION CONTEST are held yearly.

The names of students who represented the University in debate and oratory in 1911-1912 are given in the list of honors at the end of this volume.

## THE INTERSCHOLASTIC ORATORICAL PRIZE

A medal of the value of twenty dollars, and two medals of the value of ten dollars each, are offered annually by the University to the high schools of the State for the best oration delivered in a competitive contest between their representatives. This contest takes place in the spring at the time of the interscholastic athletic meet—in 1913, on May 16.

## THE BRYAN PRIZE

In 1898 Mr. William Jennings Bryan gave to the University the sum of two hundred and fifty dollars, from the interest on which a prize of twenty-five dollars is offered biennially for the best essay on the science of government. The contest is open to all matriculated undergraduate students. The essays may not be less than three thousand, nor more than six thousand, words in length, and must be left at the President's office not later than the second Wednesday in May. The prize was offered for the first time in 1901. It will be offered next in 1913.

## B'NAI B'RITH PRIZES

The Champaign and Urbana lodge of the Independent Order of B'nai B'rith has donated to the University the sum of fifty dollars, to be awarded in prizes to students of the University for essays on Jewish subjects. The sum named is the first of five annual contributions to be given for this purpose. For information in regard to the conditions governing the award of the prizes, address the Registrar, University of Illinois, Urbana, Illinois.

## ARCHITECTURE

## THE FRANCIS J. PLYM FELLOWSHIP IN ARCHITECTURE

By the generosity of Mr. Francis J. Plym, of Niles, Michigan, a graduate of the University of Illinois of the class of 1897, the Trustees have been enabled to establish a fellowship for the advanced study of architecture. The stipend attached to this fellowship is \$1,000, awarded annually by competition in Architectural Design. The holder of the fellowship is required to spend a year in study and travel abroad. For further information address the Department of Architecture.

THE PRIZE IN ARCHITECTURE of the American Academy in Rome is open for competition among qualified undergraduates and gradu-

ates of certain American architectural schools, including that of the University of Illinois. This prize grants three years of residence and travel abroad for the study of classic and Renaissance architecture.

## MILITARY CONTESTS AND PRIZES

### THE UNIVERSITY BRONZE MEDALS

Bronze medals typical of the University and its Military Department are awarded by the University to the members of the infantry companies and artillery and signal detachments which shall score the greatest number of points at the annual competitive drill, held at some time between May 15 and May 31. The members of the company rifle team making the highest score at gallery target practice are also awarded medals. The medals so awarded become the permanent property of the recipients. A complete roster of the winning organizations is published in the Annual Register of the University for the following year. (See Part V.)

### THE UNIVERSITY GOLD MEDAL

The Board of Trustees provides annually a gold medal which is to be awarded, at the annual competitive drill held near the close of the year, to the best drilled student, whose property the medal becomes. Each student must have matriculated in the University and must have completed one semester's work in Military 1 with a grade of not less than 90, and three semesters' work in Military 2 with a grade of not less than 95; and he must have an average standing of not less than 85 per cent in all of his other studies for the preceding semester, which standing shall be determined by the Registrar. The name of the winner is published in the Annual Register of the University for the following year. The reward is made for excellence in the same details as in the Hazelton contest.

### THE HAZELTON PRIZE MEDAL

Captain W. C. Hazelton provided in 1890 a medal, which is awarded, at a competitive drill held at some time between May 15 and May 31, to the best drilled student. Each competitor must have been in attendance at the University at least sixteen weeks of the current college year; must have had less than five unexcused absences from drill; and must present himself for competition in full uniform.

The award is made for excellence in:

1. Erectness of carriage, military appearance, and neatness

2. Execution of the school of the soldier, without arms
3. Manual of arms, with and without numbers

The name of the successful competitor is published in the Annual Register of the University for the following year. He is given a certificate setting forth the facts, and may wear the medal until the fifteenth day of the May following, when he must return it for the next competition.

# ASSOCIATIONS, SOCIETIES, AND CLUBS

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## GENERAL ORGANIZATIONS

### UNIVERSITY OF ILLINOIS UNION

The University of Illinois Union is an association of the men of the University, having for its general object the promotion of college spirit and good fellowship, and as a special end the erection and maintenance of a club house open to all university men. All male students are eligible to active membership in the Union; alumni and members of the faculty may become associate members. The Union elects annually a Student Council, consisting of eight seniors and seven juniors, which takes charge of certain student activities.

### THE WOMAN'S LEAGUE

The Woman's League was organized to further the spirit of unity among the women of the University and to be a medium for the maintenance of high social standards. The administrative power is vested in an Advisory Board and an Executive Committee composed of representatives from the various women's organizations. Every woman in the University is, by virtue of her registration, a member of the League. The League manages a loan fund, supports a room in the Burnham Hospital, and provides the magazines for the Woman's Building.

### HOSPITAL ORGANIZATION

The Hospital Association is an organization of students to provide a fund for hospital care in case of sickness. The members of the Association pay a fee of one dollar each semester, and the fund thus raised is used to pay the hospital expenses of members who may need such care. The fund is under the control of a committee of the Council of Administration. During the past ten years the Association has rendered valuable aid to a considerable number of members. Students are advised to join the Association.

## LITERARY SOCIETIES

The ADELPHIC, IONIAN, and PHILOMATHEAN societies for men, and the ALETHENAI, ATHENIAN, and ILLIOLA societies for women, meet weekly, on Fridays, throughout term time.

## THE CHRISTIAN ASSOCIATIONS

In 1911-1912 six hundred thirty-three men were enrolled in the Young Men's, and two hundred ninety-five women in the Young Women's Association. Each association employs a general secretary for full time. Both are affiliated with the World's Student Christian Federation.

The Association Houses furnish free for the use of all students a reading room and library, parlors, piano, magazines and papers, correspondence tables, telephones, and other conveniences. The Young Men's Christian Association building contains also lounging and game rooms, bowling alleys, and dormitories to accommodate about eighty persons.

Religious meetings for men are held on Sunday afternoons; for women on Thursday afternoons; and for both men and women on Monday evenings. There are frequent meetings for the promotion of social intercourse and good fellowship. Courses in systematic Bible study and in modern missions are offered. Within the year approximately five hundred fifty men and three hundred seventy-five women completed one or both of these courses. At the opening of the college year the associations endeavor to help new students to find desirable rooms and boarding places. Representatives of the associations meet the trains, assist students in finding satisfactory locations, and endeavor to make them feel at home. An employment bureau helps many to find work.

A copy of a Students' Hand-Book, giving information about Urbana and Champaign, the University, and the various college organizations and activities, will be sent free to prospective students.

For this Hand-Book, or for further information, address the General Secretary of either Association.

## THE COSMOPOLITAN CLUB

The Cosmopolitan Club is an organization devoted to the promotion of social and intellectual intercourse among persons of different nationalities at the University. Public meetings are held in University buildings, to afford the University community information about the customs peculiar to the various countries of the world.

The clubhouse on Daniel street affords a home to many foreign students and to a limited number of native students.

#### MA-WAN-DA

*Ma-Wan-Da* is a senior society formed by the consolidation of the two former senior societies, Shield and Trident and Phenix.

### HONORARY SOCIETIES

The honorary societies or fraternities named below are private intercollegiate organizations of students and graduates, having for their primary purpose the recognition and encouragement of excellence in scholarship in various departments of study. Election is in all cases made by the societies themselves in accordance with their own rules. The University assumes no responsibility for their elections.

#### PHI BETA KAPPA

Each year a certain number of the ranking students of the senior class are elected to membership in the Phi Beta Kappa Society. The number is ordinarily limited to one-fifth of the total membership of the graduating class.

#### *The Phi Beta Kappa Prize*

Gamma of Illinois chapter of Phi Beta Kappa offers annually a prize of \$25.00 to that member of Gamma Chapter who at his graduation from the College of Literature and Arts gives evidence of greatest promise as a scholar in the domain of liberal arts. The award is based on the following considerations: (a) Class room records; (b) other literary and scholarly activities in the University; (c) an essay, which may be a senior thesis or a term paper. At the discretion of the committee in charge, the award may be withheld if none of the essays appears worthy of the prize. Essays submitted in competition and all correspondence with reference to this prize should be addressed to the Secretary of the Phi Beta Kappa Society, University of Illinois.

#### SIGMA XI

Members of the senior class who give "promise of marked ability" in scientific investigations are eligible to membership in the Sigma Xi Society, which was founded to encourage research in pure and applied science.

## OTHER HONORARY SOCIETIES

Alpha Chi Sigma (Chemical); Alpha Gamma Rho (Agricultural); Alpha Zeta (Agricultural); Delta Kappa Chi (Commercial); Delta Sigma Rho (Oratorical); Eta Kappa Nu (Electrical Engineering); Gamma Alpha (Scientific); Kappa Delta Pi (Educational); Order of the Coif (Law); Phi Alpha Delta (Law); Phi Delta Phi (Law); Phi Lambda Upsilon (Chemical); Scabbard and Blade (Military); Scarab (Architectural); Sigma Delta Chi (Journalistic); Sigma Mu Rho (Medical); Tau Beta Pi (Engineering); Triangle (Civil Engineering).

## CLUBS AUXILIARY TO COURSES OF STUDY

In addition to the associations and societies of a general character described above, there are in each college a number of societies and clubs devoted to outside work of a literary, scientific, or technical nature auxiliary to the work of various departments of that college. Among these are the following:

In the COLLEGE OF LITERATURE AND ARTS: *Le Cercle Français*, *el Circulo Español*, the Classical Club, the Commercial Club, *der Deutsche Verein*, the English Journal Club, the History Club, the Oratorical Association, the Pen and Brush Club, the Philological Club, the Political Science Club, the Romance Journal Club, the Scandinavian Club.

In the COLLEGE OF SCIENCE: The Botanical Club, the Ceramic Club, the Chemical Club, the University of Illinois Section of the American Chemical Society, the Geological Journal Club, the Mathematical Club, the Zoological Club.

In the COLLEGE OF ENGINEERING: The Architects' Club, the Civil Engineers' Club, the Electrical Engineering Society, the Urbana Section of the American Institute of Electrical Engineers, the Mechanical Engineering Society, the Urbana Student Branch of the American Society of Mechanical Engineers, the Mining Engineering Society, Urbana Student Branch of the American Institute of Mining Engineers, the Physics Club, the Railway Club.

In the COLLEGE OF AGRICULTURE: The Agricultural Club, the Horticultural Club, the Household Science Club, the Landscape Gardeners' Club.

In the COLLEGE OF LAW: The Fuller, John Marshall, Witenagemot, and Van Twiller Law Clubs.

In the SCHOOL OF MUSIC: The University Choral and Orchestra



Society, the University Glee and Mandolin Club, the University Military Band.

In the LIBRARY SCHOOL: The Library Club.

### FRATERNITIES, SOCIETIES, AND CLUBS

*National Fraternities.*—Acacia (Masonic); Alpha Delta Phi; Alpha Sigma Phi; Alpha Tau Omega; Beta Theta Pi; Chi Phi; Chi Psi; Delta Kappa Epsilon; Delta Tau Delta; Delta Upsilon; Kappa Sigma; Phi Delta Theta; Phi Gamma Delta; Phi Kappa; Phi Kappa Psi; Phi Kappa Sigma; Phi Sigma Kappa; Psi Upsilon; Sigma Alpha Epsilon; Sigma Chi; Sigma Nu; Sigma Pi; Tau Kappa Epsilon; Theta Delta Chi; Zeta Psi.

*Sororities.*—Achoth (Eastern Star); Alpha Chi Omega; Alpha Delta Phi; Alpha Omicron Pi; Alpha Xi Delta; Chi Omega; Delta Gamma; Kappa Alpha Theta; Kappa Kappa Gamma; Phi Beta; Pi Beta Phi; Sigma Kappa.

*Local Clubs.*—Chi Beta; Delta Omega; Ilus; Iris; Pi Omicron; Tau Lambda.

*Interfraternity Organizations.*—Men's Pan Hellenic Council; Girls' Pan Hellenic Association; Helmet; Yo Ma; Yoxan; Phi Delta Psi.

### OTHER ORGANIZATIONS

Other students' societies include the following: Chinese Students' Club; Easterners' Club; Egyptian Club; H. H. Club; Ivrim; Kansas Club; Komenian Society; Lincoln League; Mask and Bauble (Dramatic); Motorcycle Club; Scribblers Club; Shomeez (Interfraternity Missouri Club); Treveri.

# UNDERGRADUATE SCHOLARSHIPS

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(For circulars giving more detailed information concerning these scholarships, apply to the Registrar of the University.)

## COUNTY SCHOLARSHIPS

A law passed by the General Assembly of the State of Illinois at the session of 1905 provides that one scholarship may be awarded annually to each county of the State. The holder thereof must be at least sixteen years of age, and a resident of the county to which he is accredited. No student who has attended the University of Illinois is eligible to a scholarship. The holder of a scholarship is relieved of payment of the matriculation fee (\$10.00, payable once, upon entrance) and incidental fees for four years (\$24.00 a year) in any department of the University other than the professional schools. The term "professional schools," as here used, includes the College of Law, the Library School, and the School of Pharmacy.

A competitive examination, under the direction of the President of the University and upon such branches of study as the President may select, is held, upon the first Saturday in June of each year, at the county court house in each county by the County Superintendent of Schools. Questions for these examinations are furnished in advance to the County Superintendents.

The successful candidates in the examinations must then meet in full, either by certificate from an accredited high school or by passing entrance examinations at the University, the requirements for admission to the freshman class, and must register the following September.

In case the scholarship in any county is not claimed by a resident of that county, the President of the University may fill the same by assigning to that county from some other county the student found to possess the next highest qualifications.

A student holding a scholarship who shall make it appear to the satisfaction of the President of the University that he requires leave of absence for the purpose of earning funds to defray his expenses while in attendance, may, in the discretion of the Presi-

dent, be granted such a leave of absence, and may be allowed an extension of his scholarship for not more than two years (making not more than six years in all from the beginning of the scholarship). Such extension will not be granted unless the student has been in attendance at the University for at least one full semester, nor unless the student's average grade during the period of his attendance has been at least 80 per cent, exclusive of grades in Military Science and Physical Training.

### GENERAL ASSEMBLY SCHOLARSHIPS

The same act by which the county scholarships described above were established also provides that each member of the General Assembly may nominate annually one eligible person from his district for a scholarship in the University, granting the same privileges as the county scholarships.

A member of the General Assembly who wishes to nominate a candidate for a scholarship should file the name and address of his nominee, as early in the spring as practicable and not later than June 1, with the President of the University and also with the County Superintendent of the county in which the nominee resides.

The nominee is then required, under the statute, (1) to pass the scholarship examination—the same that is given to competitors for the county scholarships on the first Saturday in June, under the County Superintendent; (2) to meet in full, either by certificate from an accredited high school or by passing entrance examination at the University, the requirements for admission to the freshman class; and (3) to register in the University the following September.

If a nominee fails to make a passing grade (70) in the scholarship examination he may not receive the scholarship. In this case notice will be sent to the member of the General Assembly who made the nomination, who is then entitled to nominate a second candidate. This second candidate is subject to all the requirements stated above; the scholarship examination will be given him at the University on the Wednesday preceding the fall registration days (in 1913, September 17).

A General Assembly scholarship may be extended under the same conditions as a county scholarship.

### SCHOLARSHIPS IN CERAMICS

The University offers annually to each county in the State one

scholarship, awarded by the Trustees of the University, upon the nomination of the Illinois Clay Workers' Association, to applicants who intend to pursue either of the courses in ceramics (Ceramics, and Ceramic Engineering). These scholarships are good for four years and relieve the student from the payment of the matriculation fee (\$10.00, payable once, upon entrance) and the incidental fees (\$24.00 a year).

The candidate must be at least sixteen years of age, must be a resident of the county for which he is nominated, and must meet *in full, before entering*, by certificate from an accredited high school or by passing entrance examinations at the University, the requirements for admission to the freshman class.

#### SCHOLARSHIPS IN AGRICULTURE AND HOUSEHOLD SCIENCE

The University offers every year to each county in the State, except Cook and Lake, and to each of the first ten congressional districts, one scholarship for prospective students of Agriculture in the College of Agriculture and one for prospective students of Household Science in the College of Literature and Arts, the College of Science, or the College of Agriculture.

Appointments to scholarships in agriculture are made by the Trustees of the University upon the recommendation of the Executive Committee of the Illinois Farmers' Institute; and to scholarships in household science upon the recommendation of the County Domestic Science Associations, or, for counties and districts in which there are no domestic science associations, on the recommendation of the Illinois Farmers' Institute. Persons who have already attended the University are not eligible.

Candidates who are able to meet in full the requirements for admission to the freshman class are eligible to appointment at 16 years of age. Candidates who cannot meet these entrance requirements are eligible, in 1913-1914, to appointment as special students (in the College of Agriculture) at 20 years of age; beginning in September, 1914, and thereafter, at 21 years of age.

Acceptable candidates, residents of counties or districts for which appointments have been made, not exceeding five in number from any one county or district, may be assigned to counties or districts for which no recommendations are made. The first nominee from each county or district, if duly qualified, is awarded the scholarship

at the time of registration. Other nominees must pay the regular fees on registration. Assignments to counties and districts for which there are no nominees registered are made on October 15, at which time the nominees so assigned to counties or districts other than their own receive rebates of the full amount of the matriculation and incidental fees paid.

The scholarships are good for two years and relieve the holders from the payment of the matriculation fee (\$10.00, payable once, upon matriculation), and the incidental fees (\$24.00 a year). The term of a scholarship may be extended four years, if, before it expires, the holder satisfies in full the requirements for admission to the freshman class of the college in which he or she is enrolled.

### MILITARY SCHOLARSHIPS

Students who have had three semesters of class instruction in military science and four semesters of drill practice are eligible for appointment as commissioned officers of the University Corps of Cadets. To those attaining this rank, special military scholarships, good for one year, and equal in value to the university incidental fees for the year, are open. The amount of these scholarships is paid to the holders at the close of the academic year. Appointments in the Corps of Cadets are made on the recommendation of the Commandant of Cadets, confirmed by the Council of Administration.

### OTHER SCHOLARSHIPS

For *scholarships in the College of Law*, see page 249.

For *scholarships in the Summer Session*, see page 225.

For *fellowships and graduate scholarships*, see under Graduate School, page 205.

## BENEFICIARY AID

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### EDWARD SNYDER DEPARTMENT OF STUDENTS' AID

In 1899 Edward Snyder, Professor of the German Language and Literature, *Emeritus*, gave the University the sum of \$12,000, to be lent to worthy students to enable them to finish their courses in the University.

This fund is available for junior, senior, and graduate students who need aid to remain and complete their work. The minimum loan made is fifty dollars (\$50); the maximum loan is one hundred and fifty dollars (\$150) to a junior, and two hundred dollars (\$200) to a senior or graduate student. Notes of hand are taken for the amount of the loans, with 5 per cent interest. The maximum time limit is for juniors three years and for seniors and graduates two years from the ensuing thirtieth of June.

Loans are made only to matriculated students who have attained at least the full rank of junior, who have been in residence at the University at least one year, who are at the time students in residence at the University, and who have declared their intention to graduate.

In recommending loans, preference is given to those students who are most advanced in their university work, who have shown themselves most assiduous and successful in their studies, and have shown habitual economy in living. No distinction is made on account of sex or course of study. A loan will not be recommended for any student who is believed to have been financially or morally delinquent in any respect.

Applications for loans must be made in writing and addressed to Dean Thomas Arkle Clark, Chairman of the Loan Fund Committee.

### CLASS OF 1895 LOAN FUND

A fund of \$100.00 was established by the class of 1895, to be lent to needy and deserving students. According to the conditions of the gift, the sum of fifty dollars is to be lent annually, and the benefit of the fund is open only to students who, at the time of application, are members of the freshman class. No person may

receive the benefit of the fund more than four years. The loan bears interest from the time the recipient leaves the University, and is due one-half in five years and one-half in six years after matriculation. The fund is in charge of the Loan Fund Committee of the Council of Administration. Applications should be made in writing and should be addressed to Dean Thomas Arkle Clark, Chairman of the Committee.

#### GRADUATE CLUB LOAN FUND

A fund of \$75 was established by the members of the Graduate Club in 1907-1908, for the benefit of graduate students. Its administration is in the hands of the Loan Fund Committee of the Council of Administration. Applications should be made in writing and should be addressed to Dean Thomas Arkle Clark, Chairman of the Committee.

#### WILLIAM B. M'KINLEY LOAN FUND

In September, 1912, the Hon. William B. McKinley of Champaign, Illinois, turned over to the University notes aggregating something more than \$12,000.00, this amount as it is collected to be used as a loan fund for undergraduate men. In making the donation, Mr. McKinley stipulated that loans should be made to students upon their own personal notes, and that a preference should be shown in making these loans to upperclassmen. The notes draw interest at 5 per cent and become due two years after the student's graduation. Applications for loans should be made in writing and should be addressed to Dean Thomas Arkle Clark, Chairman of the Loan Fund Committee.

#### HENRY STRONG SCHOLARSHIPS

Mr. Gordon Strong, of Chicago, trustee of the Henry Strong Educational Fund, has for 1912-13 offered the University five undergraduate scholarships of \$100.00 each, to be presented to self-supporting students of high scholastic attainments. Four of these scholarships have been awarded to members of the junior class, and one has been awarded to a member of the senior class.

# FEES AND EXPENSES

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## GENERAL FEES

*All University fees are payable each semester in advance.*

COLLEGES OF LITERATURE AND ARTS, SCIENCE, ENGINEERING, AND  
AGRICULTURE, AND LIBRARY SCHOOL

*Matriculation Fee.* Each student not holding a scholarship, upon satisfying the requirements for admission to the University, pays the matriculation fee of.....\$10.00

*Incidental Fee.* All students, excepting those holding scholarships, pay, each semester, an incidental fee of..... 12.00

*Tuition Fee.* Students conditioned on entrance requirements, and special students, except special students holding scholarships, pay, each semester, a tuition fee of..... 7.50

*Laboratory Fees.* Each student working in laboratories, or in the drafting or engineering classes, is required to pay a fee varying from \$1.00 to \$10.00, to cover materials and apparatus used and breakages or damages. (For a list of Laboratory Fees, see page 124.

*Listener's Fee.* Persons not connected with the University who attend classes as listeners, or for credit, pay for each course, each semester..... 7.50

*Late Registration Fee.* A former student who enters after the Registration Days in either semester must pay a late registration fee of..... 1.00

*Change Fee.* For every change of study-list made later than the tenth day of instruction in either semester, there is charged a fee of..... 1.00

*Special Examination Fee.* For any special examination, the fee is..... 5.00



## SCHOOL OF MUSIC

*College Courses*

- A matriculated student, enrolled in the School of Music only, pays each semester:
- If his home is in Illinois*, the incidental fee.....\$12.00
- If his home is not in Illinois*, full tuition fees in voice, piano, violin, or other stringed instrument—
- For two lessons a week..... 32.50
- For one lesson a week..... 19.50
- In harmony, counterpoint, fugue, etc..... 9.00
- A matriculated student, enrolled in another department of the University, pays each semester:
- If his home is in Illinois*, only the fees of that other department.
- If his home is not in Illinois*, both the fees of that other department and lower tuition fees in voice, piano, violin, or other stringed instrument—
- For two lessons a week..... 25.00
- For one lesson a week..... 15.00
- In harmony, counterpoint, fugue, etc..... 9.00
- A non-matriculated student, enrolled in the School of Music only, pays full tuition fees, as above:
- For two lessons a week..... 32.50
- For one lesson a week..... 19.50
- In harmony, counterpoint, fugue, etc..... 9.00
- A non-matriculated student, enrolled in another department of the University, pays the fees of that department and the lower tuition fees, as above:
- For two lessons a week..... 25.00
- For one lesson a week..... 15.00
- In harmony, counterpoint, fugue, etc..... 9.00

*Preparatory Courses*

- A student enrolled in the School of Music only pays, each semester, tuition fees in voice, piano, violin, or other stringed instrument, any band instrument, or public school method, as follows:
- For two lessons a week.....\$19.50
- For one lesson a week..... 11.00

A student enrolled in another department of the University pays the fees of that other department and lower fees in voice, piano, violin, or other stringed instrument, any band instrument, or public school method, as follows:

For two lessons a week.....	15.00
For one lesson a week.....	8.00

#### Additional

Use of a piano for practice one hour a day, each semester....\$ 3.00  
Additional hours at the same rate

Special students, taking music only, may enter classes in physical training on paying, each semester..... 7.50

#### COLLEGE OF LAW

Matriculation fee, payable upon satisfying the entrance requirements .....\$10.00  
Tuition fee, each semester..... 25.00  
Students conditioned on entrance requirements pay, each semester, an additional fee of..... 7.50  
Students not enrolled in the College of Law pay, each semester, for each Law course..... 5.00

#### SCHOOL OF PHARMACY

Matriculation fee, paid but once.....\$ 5.00  
Tuition fee, shorter course, each year..... 75.00  
Tuition fee, longer course, each year..... 125.00  
Laboratory deposit, shorter course, each year..... 10.00  
Laboratory deposit, longer course, each year..... 15.00  
Diploma fee..... 5.00

#### LABORATORY FEES (FOR MATERIALS ) 1912-1913

(The fees given below are in each case for one semester only; where a course runs through both semesters, the fee named is to be paid each semester.)

Architecture 6.....	\$ 1.50	Botany 11.....	1.50
Architecture 10.....	1.00	Botany 101.....	3.00
Architecture 13.....	1.00	Botany 102.....	3.00
Architecture 14.....	1.00	Botany 103.....	6.00
Architecture 15.....	1.00	Botany 106.....	3.00
Architecture 19.....	1.50	Botany 107.....	3.00
Architecture 31.....	1.00	Ceramics 1.....	2.00
Architecture 43.....	1.00	Ceramics 5.....	5.00
Architecture 44.....	1.00	Ceramics 6.....	5.00
Architecture 57.....	1.00	Ceramics 11.....	5.00
Architecture 68.....	1.50	Ceramics 12.....	2.00
Botany 1.....	3.00	Ceramics 13.....	4.00
Botany 2.....	1.50	Ceramics 14.....	4.00
Botany 3.....	3.00	Ceramics 15.....	4.00
Botany 4.....	1.50	Ceramics 16.....	4.00
Botany 5.....	7.50	Chemistry 1.....	8.00
Botany 6.....	1.50	Chemistry 1a.....	6.00
Botany 7.....	3.00	Chemistry 1b.....	6.00
Botany 8.....	6.00	Chemistry 3.....	8.00
Botany 9.....	3.00	Chemistry 3 (½ sem.).....	5.00

# Fees and Expenses

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Chemistry 4.....	8.00	Entomology 109.....	1.50
Chemistry 5a.....	10.00	General Engineering Drawing 2....	1.00
Chemistry 5b.....	10.00	Geology 1.....	1.00
Chemistry 5c.....	10.00	Geology 1a.....	1.00
Chemistry 5c (3 hrs.).....	8.00	Geology 2.....	1.00
Chemistry 8.....	8.00	Geology 3.....	2.25
Chemistry 9a.....	10.00	Geology 4.....	3.00
Chemistry 9b.....	10.00	Geology 5.....	2.75
Chemistry 9c.....	10.00	Geology 5a.....	2.75
Chemistry 10a.....	5.00	Geology 6.....	1.00
Chemistry 10b (½ sem.).....	5.00	Geology 7.....	1.00
Chemistry 11 (per hr.).....	2.00	Geology 8.....	1.00
Chemistry 13a.....	10.00	Geology 9.....	1.00
Chemistry 13b.....	10.00	Geology 10.....	1.50
Chemistry 15.....	8.00	Geology 11.....	1.00
Chemistry 16.....	3.00	Geology 12.....	2.25
Chemistry 21.....	8.00	Geology 13.....	2.25
Chemistry 22.....	10.00	Geology 14.....	1.00
Chemistry 27.....	8.00	Geology 15.....	1.00
Chemistry 33.....	8.00	Geology 16.....	1.00
Chemistry 35.....	10.00	Geology 17.....	1.00
Chemistry 61.....	5.00	Geology 18.....	1.00
Chemistry 65.....	5.00	Geology 23.....	1.00
Chemistry 66.....	5.00	Household Science 1.....	3.00
Chemistry 68a.....	8.00	Household Science 4.....	5.00
Chemistry 68b.....	8.00	Household Science 5.....	2.00
Chemistry 69.....	3.00	Household Science 6.....	3.00
Chemistry 70.....	3.00	Household Science 14.....	3.00
Chemistry 71.....	3.00	Mechanical Engineering 3.....	3.00
Chemistry 72.....	3.00	Mechanical Engineering 12.....	3.00
Chemistry 102c.....	5.00	Mechanical Engineering 13.....	3.00
Chemistry 103.....	10.00	Mechanical Engineering 27.....	3.00
Chemistry 103a.....	10.00	Municipal and Sanitary Eng. 2....	1.00
Chemistry 106.....	10.00	Municipal and Sanitary Eng. 6a....	1.00
Chemistry 107.....	10.00	Physics 2b.....	2.00
Chemistry 108.....	3.00	Physics 3.....	2.00
Chemistry 110.....	10.00	Physics 4.....	2.00
Chemistry 111 (per hr.).....	2.00	Physics 6b.....	2.00
Civil Engineering 4.....	1.50	Physics 15.....	2.00
Civil Engineering 4a.....	1.50	Physics 16.....	2.00
Civil Engineering 51.....	1.50	Physics 20b.....	2.00
Civil Engineering 13.....	1.50	Physics 25.....	2.00
Civil Engineering 13a.....	.50	Physics 30b.....	2.00
Civil Engineering 13b.....	.50	Physics 31.....	2.00
Civil Engineering 14.....	1.50	Physiology 1.....	3.50
Civil Engineering 14a.....	.50	Physiology 2.....	3.50
Civil Engineering 21.....	1.00	Physiology 3.....	3.50
Civil Engineering 22.....	1.00	Physiology 4.....	3.50
Electrical Engineering 16.....	3.00	Physiology 5.....	3.50
Electrical Engineering 22.....	4.00	Physiology 103.....	3.50
Electrical Engineering 23.....	5.00	Psychology 3.....	2.00
Electrical Engineering 24.....	5.00	Psychology 4.....	2.00
Electrical Engineering 27.....	5.00	Railway Engineering 11.....	2.00
Electrical Engineering 28.....	3.00	Railway Engineering 63.....	3.00
Electrical Engineering 29.....	4.00	T. and A. M. 15.....	2.00
Entomology 1.....	1.00	T. and A. M. 9.....	2.00
Entomology 2.....	1.50	T. and A. M. 10.....	1.00
Entomology 3.....	1.50	Zoology 1.....	2.50
Entomology 4.....	1.50	Zoology 2.....	3.50
Entomology 5.....	1.50	Zoology 3.....	3.00
Entomology 6.....	2.00	Zoology 6.....	3.00
Entomology 7.....	1.50	Zoology 7.....	1.00
Entomology 10.....	1.00	Zoology 9.....	2.00
Entomology 11.....	1.50	Zoology 11.....	1.50
Entomology 102.....	1.50	Zoology 13a.....	2.00
Entomology 103.....	1.50	Zoology 16.....	1.00
Entomology 108.....	1.50	Zoology 17.....	1.00

## AVERAGE ANNUAL EXPENSES

The following are estimated average annual expenses for undergraduate students attending at Urbana, *exclusive* of books, clothing, railroad fare, laboratory fees, if any, and small miscellaneous needs:

*Semester fees .....	\$ 24.00 to \$ 24.00	
Room rent for each student (two in room).....	72.00 "	80.00
Table board in boarding houses and clubs.....	144.00 "	162.00
Washing .....	20.00 "	30.00
<hr/>		
Total .....	\$260.00 to \$296.00	
Board and room in private house, a week.....	\$5.50 to \$6.50	

In addition to the foregoing, freshmen pay a matriculation fee of \$10.00, and the men are required to buy a cadet uniform, which costs \$15.00. Freshmen engineering students will need to buy a set of drawing instruments at a cost of about \$18.00.

Other necessary expenses will need to be taken into consideration. For all the necessary expenses of the year the average student is likely to need not less than \$350.00 to \$450.00. Most students spend more than this amount.

For information in regard to scholarships which cover the matriculation and incidental fees, see page 116.

## BOARD AND ROOMS

The University does not provide dormitories nor furnish board, but the numerous rooming and boarding houses near the campus are to a certain extent under the supervision of the University. The Young Men's and Young Women's Christian Associations of the University will aid new students in securing rooms and board.

*Prospective women students and their parents are invited to correspond with the Dean of Women in regard to suitable places.*

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\*Students of law and music, special students, and conditioned students must make needed changes in the amount given for "semester fees."

PART II  
THE COLLEGES AND SCHOOLS



# THE COLLEGES OF LIBERAL ARTS\*

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## THE COLLEGE OF LITERATURE AND ARTS

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For a description of the *buildings* used by this College, see page 54, for *collections* belonging to it (art, archaeology, commerce, education, and European culture), see page 63; for a summary of its *courses*, see page 71; for *clubs and societies* auxiliary to its courses of study, see page 114; for *fees*, see page 122.

### PURPOSE

The purpose of the College of Literature and Arts is to secure for its students a liberal education, including both the humanities and the sciences. Students who complete the course receive the degree of Bachelor of Arts. This College is especially adapted to the needs of the following classes of students:

1. Those who wish to pursue a four years' course for the purpose of general culture.

2. Those who take a somewhat general course in the arts and sciences as a basis for later professional or technical studies. It will ordinarily be possible for a good student to arrange his work in such a way as to secure in six years a professional or technical degree in addition to that in arts.

3. Students who desire to prepare themselves for teaching. Under the modified elective system a student may specialize to a considerable extent in the particular subject which he wishes to teach and may also find time for courses in education and related subjects which are of interest to teachers generally. Such students should, as a rule, continue their preparation in the Graduate School.

4. Students who desire to devote a considerable part of their undergraduate course to specific preparation for some particular calling other than teaching.—Such students may select courses in:—

- a. Business Administration, including general business, consular

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\*The Board of Trustees, on July 5, 1912, approved a recommendation of the University Senate that the President of the University be authorized to effect, as soon as may be practicable, a consolidation of the present colleges of Literature and Arts and Science.

service, banking, insurance, accounting, railway administration and transportation.

b. Journalism.

c. Household science and administration.

Students regularly registered for these courses are subject to the general requirements of the College, but must meet also certain special requirements described below.

### ADMISSION

See the general statement of the entrance requirements of the University, pages 75 ff.

### SPECIAL STUDENTS

For a statement of the regulations of the University in regard to special students, see page 83.

It is the policy of this College to admit as special students only a select group of mature and serious persons who, though unable to meet the formal requirements for entrance, are substantially prepared for work of college grade.

### GENERAL REQUIREMENTS FOR GRADUATION

The only degree given on graduation from the College of Literature and Arts is that of Bachelor of Arts. The following general requirements apply to all candidates for this degree:

A. *University Requirements*.—Each candidate must meet the general University requirements as to residence and registration. He must also secure credit in approved courses (see pages 131-135 below) amounting to 130 hours. An hour is one class period a week for one semester, each class period presupposing two hours' preparation by the student, or the equivalent in laboratory or drawing room.

B. *Prescribed Studies*.—Subjects specifically prescribed: *Rhetoric 1\** (6 hours); *Physical Training, 1 and 1a for men, 7 and 9 for women; Military Science 1 and 2 for men.*

C. *Group Requirements*.—Every candidate must offer a minimum of 8 hours in each of the following groups:

I. English, including literature and rhetoric.

II. Ancient and modern languages other than English, including Greek, Latin, the Germanic languages, and the Romance languages.

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\*Those students who show by examination a proficiency in composition sufficient to qualify them for the second semester's work in Rhetoric 1 may be excused from the first semester's work. See page 81.



Only courses which require the use of a foreign language may be counted in this group, and the 8 hours offered must all be in the same language.

III. The social sciences, including history, economics, political science, and sociology.

IV. Mathematics and philosophy, including mathematics, education, philosophy, and psychology. A candidate who elects mathematics must take at least five hours of it. If a student does not elect mathematics, his elections in this group must include work in at least two of the other departments of the group. That is, if he does not take mathematics, he must take either philosophy and psychology, or philosophy and education, or education and psychology. With the exception of mathematics, no subject of this group is open to freshmen.

V. The natural sciences, including astronomy, botany, chemistry, entomology, geology, physiology, physics, and zoology. Zoology 16 may not be counted toward this group requirement.

D. *Major Subjects*.—Each candidate must select some one subject to be designated as his major, and secure credit in that subject to the amount of 24 hours. The courses selected for the last two years should include some distinctly advanced work. The subjects which may be recognized as majors in this college are subject to additions from time to time; at present they are as follows: Classics<sup>1</sup>; economics; education; English<sup>2</sup> (including English literature and rhetoric); French<sup>3</sup>; German<sup>4</sup>; Greek<sup>1</sup>; history; household science; Latin<sup>1</sup>; mathematics; philosophy; political science; psychology; sociology.

Special requirements and suggestions for students in business courses and in household science are indicated below, on pages 135 and 143 respectively. Students holding scholarships in household science must make that subject their major, and take one of the courses outlined on pages 143 and 144 below.

E. *Elective Subjects*.—The remainder of the course is made up of electives chosen under the following conditions:

1. Credit is regularly given for courses properly announced in the following subjects: Art and design (the total credit in this department is limited to 20 hours); the classics; Germanic

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<sup>1</sup> For the definition of the major in this subject, see below page 299.

<sup>2</sup> For the definition of the major in English, see below page 324.

<sup>3</sup> A major in French must include 24 hours in addition to French 1.

<sup>4</sup> A major in German must include 24 hours in addition to German 1 and 3.

languages; Romance languages; English; history; economics (including accounting and commercial law); political science; sociology; philosophy; psychology; education; astronomy; mathematics; physics; chemistry (not including technical courses in chemical engineering); geology; botany (except Botany 12); zoology; entomology; physiology; household science.

2. Not more than 40 hours in any one subject may be counted for graduation, except when the student is writing a thesis. In this case he may count, in addition to the 40 hours, the hours of the seminar course in which he does his thesis work. In the department of English a student may take 40 hours in addition to Rhetoric 1.

3. No credit is granted in any subject unless the student pursues it for the full time required in the shortest course offered in that subject. For example, if the student elects a course which yields two hours of credit for one semester, he must stay in the class during the semester in order to get any credit at all. In order to secure any credit in a beginning course in a foreign language, a full year's work must be completed.

4. Seniors registered in courses open to freshmen may receive only one-half of the credit regularly assigned to such courses. For the year 1912-1913 the following courses are included in this list: Art and Design 1 and 2; Astronomy 1; Botany 11; Chemistry 1; Economics 7, 22, 26, 27; English 1, 10, 20; Entomology 1; French 1; Geology 3, 10, 14, 23; German 1, 3; Greek 1; History 1, 11; Household Science 2, 7; Latin 1; Library Science 12; Mathematics 2, 4; Rhetoric 1; Spanish 1; Zoology 1, 16.

5. A limited amount of credit toward the A.B. degree is ordinarily given for courses offered in other colleges and schools of this University as follows:

*Physical Training*.—Not to exceed 5 semester hours.

*Military Science and Tactics*.—Military Science 1 and 2.

*Law*.—Law 1 (Contracts); Law 2 (Torts); Law 3 (Real Property); Law 4 (Pleading); Law 5 (Criminal Law); Law 6 (Personal Property). The total credit is limited to 24 hours. None of these courses may be taken before the senior year. Law 1 may count for six hours only.

*Engineering*.—General Engineering Drawing 1 and 2 (Mechanical Drawing and Descriptive Geometry); Theoretical and Applied Mechanics 7 and 8 (Analytical Mechanics); Mechanical Engineering

7 or 15 (Thermodynamics); Civil Engineering 10 or 21 (Surveying); Architecture 31, 32 (Architectural Drawing); Architecture 13, 14, 15, 16, (History of Architecture); Electrical Engineering 1 and 21, or 2 and 26 (Principles).

*Agriculture.*—Agricultural Extension 2 (Elementary Agriculture for teachers); Agronomy 25 (Seeds), for business students only; Agronomy 9 (Soil Physics); Farm Management 1; Agronomy 22 (Plant Breeding); Animal Husbandry 7 (Principles of Animal Nutrition); Animal Husbandry 30 (Principles of Evolution as Applied to the Improvement of Domesticated Animals and Plants); Horticulture 9 (Forestry); Horticulture 10a (Landscape Gardening); Horticulture 12 (Evolution of Horticultural Plants); Horticulture 19 (General Floriculture), for household science students only. The total credit allowed in these agricultural courses will not ordinarily exceed 14 hours.

*Library Science.*—Library 3 (selection of Books); 7 (History of Libraries); 9 (Book Making); 12 (General Reference); 13 (Public Documents). The total credit allowed in Library Science will not ordinarily exceed 14 hours. The course in General Reference (Lib. 12) is of special value to students in the College of Literature and Arts.

*Music.*—Music 1, 2, 3, 4, and 5 (courses in the history and theory of music).

Courses not listed under paragraphs 1 to 5 above may not be counted for the degree of A.B., except by special permission of the Dean of the College.

F. *Bachelors' Theses.*—A bachelor's thesis is not generally required in this College. Students of high standing are, however, encouraged to write theses in connection with their major studies. Credit toward the degree is given for thesis work only as a part of the work in some course for which the student is registered. The presentation of a thesis is specifically required of all candidates for the honor degree. See below, page 145.

## ARRANGEMENT OF COURSES

### FIRST YEAR

#### *Subjects Prescribed for Freshmen*

The following subjects must be taken during the freshman year: *Rhetoric* 1,\* three hours each semester; *Military* 2, one hour each semester, and *Military* 1, one hour second semester (for men);

\*See footnote, page 130.

*Physical Training* (Physical Training 1 and 1a for men; 7 and 9—Physiology 6—for women); *foreign language*, 4 hours each semester.

### *Freshman Electives*

The following subjects are open to freshmen. The total amount taken in any semester is limited to eighteen hours, and should not be less than fifteen. In making his choice, the student must include subjects in at least three of the groups indicated on pages 130, 131. The Roman numerals refer to these groups.

- I. English 10<sup>1</sup> (3); Rhetoric 1 (3).
- II. French 1 (4) or 2 (4); German 1 (4) or 3 (4) or 4 (4) or 5 (4); Greek 1 (4) or 7 (3); Latin 1 (4) or 2 (4); Spanish 1 (4).
- III. Mathematics 2 (3) and 4 (2).
- IV. Economics 7 (3) or 26 (3); History 1 (4).
- V. Astronomy 1 (3); Botany 2<sup>2</sup> (5), 4 (5), 11 (5); Chemistry 1<sup>3</sup> (5) or 1a<sup>3</sup> (4); Entomology 1 (2); Geology 3<sup>3</sup> (5), 14 (3), 23<sup>3</sup> (5); Physics 2a<sup>4</sup> and 2b<sup>4</sup> (5); Zoology 1<sup>4</sup> (5).

### Second Semester:

- I. English 10 (3); Rhetoric 1 (3).
- II. French 1 (4) or 2 (4); German 3 (4) or 4 (4) or 5 (4) or 6 (4) or 7 (4); Greek 1 (4), 4 (4), or 6 (3); Latin 1 (4) or 2 (4); Spanish 1 (4).
- III. Mathematics 6 (5).
- IV. Economics 22 (3) or 27 (3); History 1 (4) or 11 (3).
- V. Astronomy 4 (5); Botany 1 (5), 2<sup>2</sup> (5); Chemistry 1<sup>3</sup> (5) or 1a<sup>3</sup> (4) or 2 and 3 (5); Entomology 1 (2); Geology 3<sup>3</sup> (5) or 23<sup>3</sup> (5); Physics 2a<sup>4</sup> and 2b<sup>4</sup> (5); Zoology 2 (5), 1<sup>4</sup> (5), or 16 (2).

The following subjects not included in any group are also open to freshmen:

### First Semester:

- Art and Design 1 (2 or 3).

<sup>1</sup> The figure immediately following the subject is the number of the course (see "General Description of Courses," page 255 ff.); the figure in parenthesis indicates the number of credit hours to be secured in the course each semester.

<sup>2</sup> Either semester may be taken separately, or both together; entrance botany required.

<sup>3</sup> May be taken in either semester, but not in both.

<sup>4</sup> Prerequisite: Mathematics 4 (Trigonometry) which may be taken at the same time.

Household Science 2 (2) or 7 (2).

Library Science 12 (2).

**Second Semester:**

Art and Design 1 (3), 2 (2), 3 (3), 10 (1), or 12 (2).

Household Science 1 (3).

Library Science 12 (2).

**SECOND YEAR**

Male students must continue Military 2 throughout the year. Students who have failed to secure credit for any of the prescribed subjects of the freshman year must make up such deficiencies at this time.

**ELECTION**

Aside from the subjects prescribed for the first two years, each student selects, with the advice of the Dean or other college advisers, such courses as will enable him to meet the requirements for graduation as stated above.

**COURSES IN BUSINESS ADMINISTRATION**

Courses in economics, accountancy, banking, commerce, railway administration, and industry are offered in combination with courses in language, law, and science, with the aim of providing a university training for business life. The combined courses are designed to give the student a knowledge of the general principles that underlie all lines of business, with special training in the work of some particular calling.

**ARRANGEMENT OF COURSES**

The subjects of study are so arranged as to furnish training for (1) general business; (2) banking; (3) accountancy; (4) railway traffic and accountancy; (5) railway transportation; (6) insurance; (7) the consular service.

The work of the class-room is supplemented with lectures by practical specialists, and with visits of inspection to industrial and mercantile establishments.

The outlines of the courses in General Business, Banking, Accountancy, Railway Administration, Insurance, and the Course for the Consular Service are given below.

**GENERAL BUSINESS COURSE**

The general business course is intended for students who wish a general knowledge of modern business organization and methods

and their relation to the public welfare, without specializing in the details of any particular business.

Every student must take 15 to 18 hours of work each semester. Students desiring mathematics, or taking courses requiring it, should elect it the first year, omitting Economic Resources (Economics 26), or Economic History of the United States (Economics 22), and science, which may then be elected the second year.

### Course in General Business

FIRST YEAR	
FIRST SEMESTER	SECOND SEMESTER
<i>Prescribed Subjects</i>	<i>Prescribed Subjects</i>
Foreign language	Foreign language
Rhetoric (Rhet. 1)	Rhetoric (Rhet. 1)
Military (Mil. 2)	Military (Mil. 1 2)
Physical Training (P. T. 1, 1a)	Physical Training (P. T. 1a)
Economic Resources (Econ. 26) or	Modern Industries (Econ. 27) or
English Econ. Hist. (Econ. 7)	Econ. Hist. of U. S. (Econ. 22)
Mathematics (Math. 2 4) or	Mathematics (Math. 6) or
Science	Science
SECOND YEAR	
<i>Prescribed Subjects</i>	<i>Prescribed Subjects</i>
Principles of Econ. (Econ. 1)	Money & Banking (Econ. 3)
Amer. Nat'l Gov't (Pol. Sci. 1)	Business Organization (Econ. 6)
Military (Mil. 2)	Business Writing (Rhet. 10)
History of U. S. (Hist. 3) or	Military (Mil. 2)
European History (Hist. 1)	State and Local Gov't (Pol. Sci. 3)
<i>Suggested Electives</i>	History of U. S. (Hist. 3) or
Foreign language continued	European History (Hist. 1)
Mathematics	<i>Suggested Electives</i>
Science	Foreign language continued
	Mathematics
	Science
THIRD YEAR	
<i>Prescribed Subjects</i>	<i>Prescribed Subjects</i>
Accounting (Acc'y 1)	Accounting (Acc'y 1)
Corporation Management (Econ. 10)	Organization of Foreign Com. (Econ. 31) or
Domestic Com. (Econ. 28) or	Tariff and Customs Regulations (Econ. 30)
Foreign Com. (Econ. 29)	<i>Suggested Electives</i>
<i>Suggested Electives</i>	History
History	Indust. Consolid. (Econ. 11)
Public Finance (Econ. 5)	Foreign language continued
Foreign language continued	Adv. Accounting (Acc'y 4)
Accounting (Acc'y 3)	Railway Rates (Econ. 42)
Railway Transportation (Econ. 41)	Psychology (Psych. 2)
State Administration (Pol. Sci. 13)	Logic (Phil. 1b)
Psychology (Psych. 1)	
Municipal Gov't (Pol. Sci. 4)	
FOURTH YEAR	
<i>Prescribed Subjects</i>	<i>Prescribed Subjects</i>
Seminar (Econ. 18)	Seminar (Econ. 18)
Labor Problems (Econ. 12)	Com. Law (Econ. 25)
Commercial Law (Econ. 25)	Econ. Development of Europe (Econ. 13)
<i>Suggested Electives</i>	<i>Suggested Electives</i>
Political Ethics (Phil. 9)	Social Reform (Econ. 21)
Constitutional Law (Pol. Sci. 5)	Finan. Hist. of U. S. (Econ. 4)
(See also third year electives)	(See also third year electives)

## COURSE IN BANKING

The work of the first and second years in banking is the same as in the course in general business, but students must take advanced algebra (Math. 2), which is a prerequisite for the mathematics of investment (Math. 23a).

## Course in Banking

## THIRD YEAR

## FIRST SEMESTER

*Prescribed Subjects*

Accounting (Acc'y 1)  
Corporation Management (Econ. 10)  
Public Finance (Econ. 5)

*Suggested Electives*

Indust. Accounting (Acc'y 3)  
Domestic Com. (Econ. 28)  
Logic (Phil. 1a)  
History

## SECOND SEMESTER

*Prescribed Subjects*

Accounting (Acc'y 1)  
Math. of Investment (Math. 23a)  
Econ. Development of Europe  
(Econ. 13)

*Suggested Electives*

Tariff and Customs Regulations  
(Econ. 30)  
Indust. Consolid. (Econ. 11)  
History

## FOURTH YEAR

*Prescribed Subjects*

Practical Banking (Econ. 9)  
Foreign Com. (Econ. 29)  
Commercial Law (Econ. 25)  
Seminar (Econ. 18)

*Suggested Electives*

Labor Problems (Econ. 12)  
Political Ethics (Phil. 9)

*Prescribed Subjects*

The Money Market (Econ. 8)  
Finan. Hist. of U. S. (Econ. 4b)  
Commercial Law (Econ. 25)  
Seminar (Econ. 18)

*Suggested Electives*

Organization of Foreign Com.  
(Econ. 31)  
Law of Taxation (Pol. Sci. 30)

## COURSES IN ACCOUNTANCY

The development of the commercial, industrial, and financial interests of the country has given rise to a demand for three classes of workers in accountancy, (1) the teacher, (2) the business executive, (3) the public accountant.

In order to give students adequate preparation for these three fields, the University offers several courses of study:

1. A four years' course in business administration with a maximum of work in accountancy, economics, history, political science, statistics, language, and other subjects.

2. Work in accountancy open to election by students in business administration as part of the general training necessary to a successful business executive.

3. A two years' special course in preparation for the examinations required by law for securing a certificate as certified public accountant.

According to this law, passed in 1903, establishing accountancy upon a professional basis, candidates are required to pass examinations in commercial law as affecting accountancy, the theory of accounts, practical accounting, and auditing.

## Four-Year Course in Accountancy

## FIRST YEAR

## FIRST SEMESTER

*Prescribed Subjects*

Foreign language  
 Rhetoric (Rhet. 1)  
 Military (Mil. 2)  
 Physical Training (P. T. 1, 1a)  
 Algebra and Trig. (Math. 2, 4)  
 English Econ. Hist. (Econ. 7) or  
 Economic Resources (Econ. 26)

## SECOND SEMESTER

*Prescribed Subjects*

Foreign language  
 Rhetoric (Rhet. 1)  
 Military (Mil. 1, 2)  
 Physical Training (P. T. 1a)  
 Analytical Geom. (Math. 6)  
 Modern Industries (Econ. 27) or  
 Econ. Hist. of U. S. (Econ. 22)

## SECOND YEAR

*Prescribed Subjects*

Principles of Econ. (Econ. 1)  
 Prin. of Accountancy (Acc'y 1)  
 Military (Mil. 2)  
 Science

*Suggested Electives*

Foreign language continued  
 Calculus (Math. 8a)  
 European History (Hist. 1)  
 History of U. S. (Hist. 3)  
 Amer. Nat'l Gov't (Pol. Sci. 1)

*Prescribed Subjects*

Money and Banking (Econ. 3)  
 Business Organization (Econ. 6)  
 Business Writing (Rhet. 10)  
 Prin. of Accountancy (Acc'y 1)  
 Military (Mil. 2)  
 Science

*Suggested Electives*

Foreign language continued  
 European History (Hist. 1)  
 History of U. S. (Hist. 3)  
 State and Local Gov't (Pol. Sci. 3)

## THIRD YEAR

*Prescribed Subjects*

Indust. Accounting (Acc'y 3)  
 Corporation Management (Econ. 10)  
 Public Finance (Econ. 5)  
 Municipal Gov't (Pol. Sci. 4)

*Suggested Electives*

Foreign language continued  
 Domestic Commerce (Econ. 28)  
 Logic (Phil. 1a)  
 Railway Transportation (Econ. 41)

*Prescribed Subjects*

Adv. Accounting (Acc'y 4)  
 Indust. Consolid. (Econ. 11)  
 Mathematics of Investment (Math. 23a)

*Suggested Electives*

Foreign language continued  
 Tariff and Customs Regulations (Econ. 30)  
 Railway Rates (Econ. 42)

## FOURTH YEAR

*Prescribed Subjects*

Advanced Accounting (Acc'y 7)  
 Commercial Law (Econ. 25)  
 Seminar (Econ. 18)  
 Political Ethics (Phil. 9)

*Suggested Electives*

Practical Banking (Econ. 9)  
 Labor Problems (Econ. 12)

*Prescribed Subjects*

Auditing (Acc'y 5)  
 Commercial Law (Econ. 25)  
 Seminar (Econ. 18)

*Suggested Electives*

Money Market (Econ. 8)  
 Finan. Hist. of U. S. (Econ. 4b)

## TWO-YEAR COURSE IN ACCOUNTANCY

This course is open only to students in accountancy who are preparing for the C. P. A. examinations, who are at least 20 years of age and able to matriculate in the University, and who can furnish satisfactory evidence of at least one year's experience in the office of a practicing public accountant. The course must be taken as outlined. No variation from it is allowed.



**Two-Year Course in Accountancy****FIRST YEAR****FIRST SEMESTER***Prescribed Subjects*

Prin. of Accountancy (Acc'y 1)  
 Indust. Accounting (Acc'y 3)  
 Rhetoric (Rhet. 1)  
 Principles of Econ. (Econ. 1)  
 Algebra (Math. 2)  
 Military (Mil. 2)  
 Physical Training (P. T. 1, 1a)

**SECOND SEMESTER***Prescribed Subjects*

Prin. of Accountancy (Acc'y 1)  
 Adv. Accounting (Acc'y 4)  
 Rhetoric (Rhet. 1)  
 Money and Banking (Econ. 3)  
 Mathematics of Investment  
 (Math. 23a)  
 Military (Mil. 1, 2)  
 Physical Training (P. T. 1a)

**SECOND YEAR***Prescribed Subjects*

Adv. Accounting (Acc'y 7)  
 Corporation Management (Econ. 10)  
 Commercial Law (Econ. 25)  
 Practical Banking (Econ. 9) or  
 Economics of Ins. (Econ. 33)  
 Military (Mil. 2)

*Prescribed Subjects*

Auditing (Acc'y 5)  
 Railway Accounting (Acc'y 6)  
 Business Writing (Rhet. 10)  
 Commercial Law (Econ. 25)  
 Property Insurance (Econ. 34)  
 Military (Mil. 2)

**COURSES IN RAILWAY ADMINISTRATION**

There are two courses offered under the head of railway administration, one emphasizing those subjects which are of most value to the student interested in the accounting and traffic aspects of railway work, the other laying stress upon the transportation service, properly so called, and intended to prepare men directly for the transportation departments of railways.

**Course in Railway Traffic and Accounting****FIRST YEAR****FIRST SEMESTER***Prescribed Subjects*

Foreign language  
 Rhetoric (Rhet. 1)  
 Military (Mil. 2)  
 Physical Training (P. T. 1, 1a)  
 Algebra and Trig. (Math. 2, 4)  
 Economic Resources (Econ. 26) or  
 Engl. Econ. Hist. (Econ. 7)

**SECOND SEMESTER***Prescribed Subjects*

Foreign language  
 Rhetoric (Rhet. 1)  
 Military (Mil. 1, 2)  
 Physical Training (P. T. 1a)  
 Analytical Geometry (Math. 6)  
 Econ. Hist. of U. S. (Econ. 22) or  
 Modern Industries (Econ. 27)

**SECOND YEAR***Prescribed Subjects*

Principles of Econ. (Econ. 1)  
 Calculus (Math. 8a)  
 Physics (Phys. 1 and 3)  
 Military (Mil. 2)

*Prescribed Subjects*

Money and Banking (Econ. 3)  
 Business Organization (Econ. 6)  
 Business Writing (Rhet. 10)  
 Physics (Phys. 1 and 3)  
 Military (Mil. 2)

**THIRD YEAR***Prescribed Subjects*

Accounting (Acc'y 1)  
 Ind. Accounting (Acc'y 3)  
 Corporation Management (Econ. 10)  
 Railway Transportation (Econ. 41)

*Prescribed Subjects*

Accounting (Acc'y 1)  
 Adv. Accounting (Acc'y 4)  
 Indust. Consolid. (Econ. 11)  
 Railway Rates (Econ. 42)  
 Mathematics of Investment (Math. 23a)

**FOURTH YEAR***Prescribed Subjects*

Accounting (Acc'y 6, 7)  
 Traffic Admin. (Econ. 43) or  
 Railway Operation (Econ. 45)  
 Sem. in R'y Admin. (Econ. 18)  
 Commercial Law (Econ. 25)

*Prescribed Subjects*

Accounting (Acc'y 5)  
 Traffic Admin. (Econ. 43) or  
 Railway Operation (Econ. 45)  
 Sem. in R'y Admin. (Econ. 18)  
 Commercial Law (Econ. 25)

## COURSE IN RAILWAY TRANSPORTATION

In addition to the prescribed subjects in this course other subjects may be elected where opportunity offers, but six hours of such elections must be from history, political science, more advanced language, or ethics.

## Course in Railway Transportation

## FIRST YEAR

## FIRST SEMESTER

*Prescribed Subjects*

Foreign language  
Rhetoric (Rhet. 1)  
Military (Mil. 2)  
Physical Training (P. T. 1, 1a)  
Gen. Engin. Drawing (G. E. D. 1)  
Algebra and Trig. (Math. 2, 4)

## SECOND SEMESTER

*Prescribed Subjects*

Foreign language  
Rhetoric (Rhet. 1)  
Military (Mil. 1, 2)  
Physical Training (P. T. 1a)  
\*Descriptive Geom. (G. E. D. 2)  
Anal. Geom. (Math. 6)

## SECOND YEAR

*Prescribed Subjects*

Principles of Econ. (Econ. 1)  
Calculus (Math. 7)  
Physics (Phys. 1, 3)  
Military (Mil. 2)

*Prescribed Subjects*

Money and Banking (Econ. 3)  
Calculus (Math. 9)  
Physics (Phys. 1, 3)  
Military (Mil. 2)  
Anal. Mech. (T. and A. M. 7)  
Engines and Boilers (M. E. 11)

## THIRD YEAR

*Prescribed Subjects*

Corporation Management (Econ. 10)  
Railway Transportation (Econ. 41)  
Traffic Admin. (Econ. 43)  
Anal. Mech. and Resist. of Materials  
(T. and A. M. 8, 9)

*Prescribed Subjects*

Business Writing (Rhet. 10)  
Railway Rates (Econ. 42)  
Traffic Administration (Econ. 43)  
Mech. Engin. Lab. (M. E. 13)  
Electrical Engin. (E. E. 16)  
Surveying (C. E. 10)

## FOURTH YEAR

*Prescribed Subjects*

Railway Operation (Econ. 45)  
Sem. in R'y Admin. (Econ. 18)  
Accounting (Acc'y 1)  
Labor Problems (Econ. 12)  
Locomotives (R'y M. E. 1)  
Engin. Materials (T. and A. M. 6)

*Prescribed Subjects*

Railway Operation (Econ. 45)  
Sem. in R'y Admin. (Econ. 18)  
Accounting (Acc'y 1)  
R'y Tests (R'y M. E. 11)

## COURSE IN INSURANCE

The work of the first and second years in insurance is the same as in the course in railway traffic and accounting, except that Econ. 7 (Econ. Hist. of England) may take the place of Economic Resources (Econ. 26), and that any other science may be taken instead of physics. (See page 139).

## Course in Insurance

## THIRD YEAR

## FIRST SEMESTER

*Prescribed Subjects*

Accounting (Acc'y 1)  
Corporation Management (Econ. 10)  
American Nat'l Gov't (Pol. Sci. 1)

*Suggested Electives*

Foreign language continued  
History of U. S. (Hist. 3)  
European History (Hist. 1)  
Public Finance (Econ. 5)

## SECOND SEMESTER

*Prescribed Subjects*

Accounting (Acc'y 1)  
Mathematics of Investment  
(Math. 23a)  
State and Local Gov't (Pol. Sci. 3)

*Suggested Electives*

Foreign language continued  
History of U. S. (Hist. 3)  
European History (Hist. 1)

\*This subject is to be taken for three hours' credit only.

## FOURTH YEAR

*Prescribed Subjects*

Econ. of Insurance (Econ. 33)  
 Commercial Law (Econ. 25)  
 Sem. in Insur. (Econ. 18)  
 Actuarial Theory (Math. 31)  
 State Administration (Pol. Sci. 13)  
*Suggested Electives*  
 Political Ethics (Phil. 9)  
 Labor Problems (Econ. 12)  
 Practical Banking (Econ. 9)

*Prescribed Subjects*

Property Insurance (Econ. 34)  
 Commercial Law (Econ. 25)  
 Sem. in Insur. (Econ. 18)  
*Suggested Electives*  
 Finan. Hist. of U. S. (Econ. 4b)  
 Econ. Development of Europe  
 (Econ. 13)  
 Indus. Consolid. (Econ. 11)  
 Money Market (Econ. 8)

## COURSE FOR THE CONSULAR SERVICE

This course is intended for students who plan to take the civil service examinations for consular and diplomatic positions. The electives chosen depend on the country in which the student aims to serve.

## Course for the Consular Service

## FIRST YEAR

## FIRST SEMESTER

*Prescribed Subjects*

Foreign language  
 Rhetoric (Rhet. 1)  
 Military Training (Mil. 2)  
 Physical Training (P. T. 1, 1a)  
 Economic Resources (Econ. 26) or  
 English Econ. Hist. (Econ. 7)  
 European History (Hist. 1)

*Prescribed Subjects*

Principles of Econ. (Econ. 1)  
 Foreign language continued  
 Amer. Nat'l Gov't (Pol. Sci. 1)  
 Science  
 Military (Mil. 2)

## SECOND SEMESTER

*Prescribed Subjects*

Foreign language  
 Rhetoric (Rhet. 1)  
 Military Training (Mil. 1, 2)  
 Physical Training (P. T. 1a)  
 Modern Industries (Econ. 27) or  
 Econ. Hist. of U. S. (Econ. 22)  
 European History (Hist. 1)

## SECOND YEAR

*Prescribed Subjects*

Money and Banking (Econ. 3)  
 Business Organization (Econ. 6)  
 Foreign language continued  
 State and Local Gov't (Pol. Sci. 3)  
 Business Writing (Rhet. 10)  
 Science  
 Military (Mil. 2)

## THIRD YEAR

*Prescribed Subjects*

*Prescribed Subjects*  
 Domestic Com. (Econ. 28) or  
 Foreign Com. (Econ. 29)  
 Foreign language continued  
 History of U. S. (Hist. 3)  
 International Law (Pol. Sci. 6)

Organization of For. Com. (Econ. 31) or  
 Tariff and Customs Regulations  
 (Econ. 30)  
 Foreign language continued  
 History of U. S. (Hist. 3)  
 Amer. Diplomacy (Pol. Sci. 7) or  
 World Politics (Pol. Sci. 18)

## FOURTH YEAR

*Prescribed Subjects*

Foreign language continued  
 Public Finance (Econ. 5)  
 Political Ethics (Phil. 9)  
 Seminar (Econ. 18)  
 Commercial Law (Econ. 25)  
 British Gov't (Pol. Sci. 21)  
*Suggested Electives*  
 Corp. Management (Econ. 10)  
 Revolutionary and Napoleonic Era  
 (Hist. 7)

*Prescribed Subjects*

Foreign language continued  
 Econ. Development of Europe  
 (Econ. 13)  
 Commercial Law (Econ. 25)  
 Continental European Governments  
 (Pol. Sci. 22)  
 Seminar (Econ. 18)  
*Suggested Electives*  
 History of Latin America and the  
 Philippines (Hist. 27)  
 Europe in 19th Cent. (Hist. 20)

## COURSES IN JOURNALISM

Students who are preparing to enter the advertising or managerial sides of journalistic work should elect economics as a major and enroll in one of the business courses. The work they will take will then be selected under the advice of the proper instructors, according to the needs of the individual student and within the requirements for the College for graduation.

Students who are preparing for journalistic work on the reportorial, literary, or editorial sides should take their major work in English. They will make up their study schedules from the following suggested course. With the consent of the adviser, other courses may, for purposes of specialization, be substituted for suggested courses. A program which satisfies the group and major requirements may, for instance, be so modified in the third and fourth years as to lay emphasis on any one of the social sciences.

## Suggested Course in Journalism

(Major in English)

## FIRST YEAR

<i>Prescribed Subjects</i>		<i>Prescribed Subjects</i>	
Rhetoric 1 .....	3	Rhetoric 1 .....	3
Physical training .....	1	Physical training .....	1
Military .....	1	Military .....	2
<i>Suggested Electives</i>		<i>Suggested Electives</i>	
Continental European History		History 1.....	4
His. 1) .....	4	Foreign language .....	4
Foreign language .....	4	English 10 or science.....	3
English 10 or science.....	3 or 5		
General Reference (Library 12).....	2		

## SECOND YEAR

<i>Prescribed Subject</i>		<i>Prescribed Subject</i>	
Military .....	1	Military .....	1
<i>Suggested Electives</i>		<i>Suggested Electives</i>	
News Writing (Rhetoric 12).....	2	News Writing (Rhetoric 12).....	2
English 1 or science.....	3 or 4 or 5	Foreign language continued.....	4
History of U. S. (His. 3).....	3	History of U. S. (His. 3).....	3
Foreign language continued.....	4	English 1 or State & Local Govt.	
Am. Nat'l. Govt. (Pol. Sc. 1) or		Pol. Sc. 3) (4 or 3) or Money	
Principles of Economics (Econ.		and Banking (Econ. 3).....	3
1) .....	5	Shakespeare (English 23) or	3
Am. Literature (English 16).....	2	Literature (English 16).....	2

## THIRD YEAR

Intermediate English .....	(3)	Intermediate English .....	(3)
Municipal Govt. (Pol. Sc. 4).....	3	Science .....	5
Foreign language continued.....	4	State & Local Govt. (Pol. Sc. 3) or	
Logic (Philosophy 1).....	3	Political Parties (Pol. Sc. 14) 3 or 2	
Rhetoric 15 or 6, or Psychology 1..	3	Intro. to Philosophy (Phil. 2).....	3
Sociology 1 .....	3	Foreign language.....	4
		Rhetoric 15 or 17, or Psychology 1	3
		Sociology 1 .....	3

## FOURTH YEAR

Rhetoric 15 or English 14.....	3	Rhetoric 15 or English 14.....	3
Political Ethics (Phil. 9) or Const.		Contemporary politics (Pol. Sc. 18	
Law (Pol. Sc. 5).....	3	or 28) .....	2 or 3
History of U. S. (His. 21).....	3	Social & Indust. Legis. (Pol. Sc.	
Public Finance, or Corporation		11) .....	3
Management and Finance, or Labor		Industrial Consolidations, or Econ-	
Problems (Econ. 5 or 10 or		omic History of Europe, or Social-	
12) .....	3	ism and Social Reform	
		(Econ 11 or 13 or 21).....	3

## HOUSEHOLD SCIENCE

Students who hold scholarships in household science must make this subject their major, and take each semester at least four hours in household science or in subjects required for admission to the household science courses. The suggested course in household administration is described below. Household science students who do not take that course must meet the following requirements:

*First Semester*—Physical Training 7, Physiology 6, Rhetoric 1, foreign language, Chemistry 1, Household Science 2.

*Second Semester*—Physical Training 7, Rhetoric 1, foreign language, Household Science 1, Chemistry 2 and 3.

They must then elect in regular course and finish by the end of the junior year, Botany 5, Chemistry 13a, 9 and 9c, and an additional five hours in botany or zoology. In order to graduate, household science students must also secure credit for Art and Design 1, Art and Design 12, Art and Design 19, and Economics 1.

Students in household science must also satisfy the requirements for graduation in the College of Literature and Arts, in so far as these are not covered by the courses above mentioned.

## Suggested Course in Household Administration

## FIRST YEAR

FIRST SEMESTER	SECOND SEMESTER
Rhetoric and Themes (Rhet. 1)	Rhetoric & Themes (Rhet. 1)
Free Hand Drawing (Art & D. 1)	Applied Design (Art & Design 12)
Home Architecture & Sanitation	Foreign language
(Household Science 2)	Physical Training
Foreign language	Introductory Zoölogy (Zoöl. 1)
Physical Training	
Hygiene (Physiology 6)	
English (English 10) or	
Econ. Hist. of the U. S. (Econ. 22)	

## SECOND YEAR

Art and Design 19	Inorganic Chemistry (Chem. 2)
Textiles (H. Sci. 7)	Qualitative Analysis (Chem. 3)
Inorganic Chemistry (Chem. 1)	Economic History of the United
Economic Resources (Econ. 26)	States (Econ. 22)
<i>Suggested Electives</i>	History of the United States
Foreign language	(Hist. 3)
Introd. European Hist. or History	Household Art and Clothing
of the United States (Hist. 1 or 3)	(Household Science 12)
General Floriculture (Hort. 19)	

THIRD YEAR	
Economic Uses of Food (Household Science 6)	Dietetics (Household Science 5)
Elementary Psychology (Psych. 1)	Elementary Home Decoration (Household Science 3)
Physiology 4 (Minor course)	Elementary Psychology (Psych. 2)
Principles of Economics (Econ. 1)	Bacteriology (Bot. 5)
	History of Fine Art (Art & D. 19)
FOURTH YEAR	
Home Management (Household Science 10)	Economics of the Family (Household Science 15)
History of Home Economics (Household Science 13)	Ethics (Philos. 7)
Accountancy 1	Social Aspects of Education (Sociol. 26)
Elementary Law (Pol. Sci. 17)	
General Sociology (Soc. 1)	
Principles of Education (Edu. 1)	

### COURSE PRELIMINARY TO LAW

It is recognized by the best authorities on legal education that professional studies in law should be preceded by a thorough course in the humanities and the sciences. As a foundation for the study and practice of law, the following subjects offered by this College are of special importance: English, with special reference to composition and public speaking; Latin and French; logic; constitutional and political history; political science; economics; sociology.

By the proper selection of his studies it is possible for a prospective law student to take both the degree in arts and the degree in law in six years. The following first year courses in the College of Law, not exceeding a total of 24 hours, may be counted for the degree of bachelor of arts: Law 1 (contracts); Law 2 (torts); Law 3 (real property); Law 4 (pleading); Law 5 (criminal law); Law 6 (personal property). Law 1 may count for six hours only. *Students are not permitted to take this work in law until their senior year.* If the student is also a candidate for the degree of LL.B., or J.D., he should in his fourth year register in the College of Law, pay the usual fee of that College, and file a copy of his study-list with the adviser for seniors in this College. A fee of five dollars is charged for every law subject taken by students who do not pay the regular law school fee.

Courses in law do not in themselves constitute a major in this College, but six hours of law are accepted as part of the requirements for majors in the following departments: economics, history, political science, and sociology.

When taken by students registered in the College of Law, credit to a total of six hours toward the degree of LL.B. is accepted for courses offered by the College of Literature and Arts in jurispru-

dence, international law, administrative law, and the law of taxation.

The degree of Bachelor of Arts is conferred at the close of the fourth year of the combined course providing that all the requirements for the degree are met at that time.

Candidates for the degree of Doctor of Law (J.D.) must take four hours in history, economics, political science, or sociology, in the fourth year of their course.

Students admitted to this University from other institutions may count the above courses in law for the degree of A.B. only on condition of completing at least 30 hours' work in residence in subjects offered by the College of Literature and Arts.

### COMBINED ARTS AND ENGINEERING COURSE

A graduate of the College of Literature and Arts, whose mathematical training includes the work of the calculus, who has had the usual college course in physics, and sufficient training in the principles of mechanics to enable him to begin the mechanics of the junior year, may receive the degree of Bachelor of Science in the departments of the College of Engineering upon the completion of sixty-eight credit hours in such lines (including thesis) as may be directed by the faculty. This work may ordinarily be done in two academic years. Candidates for the degree in the department of architecture are not required to be prepared in calculus or mechanics, but should possess special preparation in drawing. The courses in the College of Engineering which may be counted for the degree of A.B. are listed on page 132 above.

### PREPARATION OF TEACHERS

For information concerning preparation of teachers and the recommendation of the University committee on appointments see page 214.

### HONORS

#### *The Honor Degree*

The faculty of the College of Literature and Arts recommends candidates for the degree of A.B. with honors in a particular subject, under the following conditions:

1. The amount of work required in the honor subject shall be that required for a major in that subject.

2. The candidate must also offer two minor subjects. Not less than 9 hours will be accepted in either subject, and the aggregate for both subjects must be at least 24 hours.

3. The work done in the minor subjects must be of a distinctly superior quality; grades of at least 85 are required in all the minor subjects; especially poor or careless work in any other subject may, by vote of the faculty, cause the honor degree to be withheld.

4. Each candidate is required to present an acceptable thesis in his major subject; the thesis may be written in connection with some recognized course in the department.

5. The honor subjects at present recognized in this College are as follows: The classics (either the classics as a whole, or Greek or Latin separately), economics, education, English, German, French, history, mathematics, philosophy, political science, psychology, sociology. The specific requirements for honors in particular subjects are stated in connection with the description of courses for the several departments, pages 255ff. below.

The purpose of these honors is not to encourage premature specialization, but to give special recognition to students who have pursued with success carefully correlated courses of study, and to emphasize the importance, for scholarship in any given subject, of thorough training in other more or less related subjects. Candidates should announce their intention as early as possible in their college course and consult freely with the head of the department concerned in regard to the selection of their studies.

#### *Preliminary Honors*

The University regulations regarding preliminary honors are stated above, page 106.

#### *Freshman Honors*

At the close of each year a list of those members of the freshman class who have made an especially good record in scholarship is prepared. The names of such students are announced at an assembly of the College; notice is also sent in each case to the parent or guardian, and to the principal of the high school of which the student is a graduate.

#### *Honorary Societies*

For information concerning the honorary societies represented in the University, see page 113.



## THE COLLEGE OF SCIENCE

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For a description of the *buildings* used by this College, see page 54; for *collections* belonging to it (botany, entomology, geology, and zoology), see page 64; for a summary of its *courses*, see page 72; for *clubs and societies* auxiliary to its courses of study, see page 114; for *honors*, see page 106; for *honorary societies*, see page 113; for *fees*, see page 122.

### PURPOSES

The College of Science offers two distinct groups of courses. The purpose of the first group is to furnish a well balanced general education as a preparation for distinctly professional studies, for teaching, or for business life. These courses require major work in at least one branch of science<sup>1</sup>, but also require work in some foreign language and in other literary or philosophical subjects. The courses of this group lead to the degree of Bachelor of Arts.

The courses of the second group are more technical in character and are designed to prepare students for a professional career of a specific character. In these courses but little opportunity for elective studies can be offered. Upon completion of the course the degree of Bachelor of Science, usually with a special designation, is given.

A portion of the work of a student registering in this College may be selected, in accordance with the provisions described in the following pages, from the offerings of the other colleges or schools of the University.

### ADMISSION

See the general statement of the entrance requirements of the University, page 75.

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<sup>1</sup> For list of Majors, see page 150.

## SPECIAL STUDENTS

See the statement of the general regulations of the University in regard to special students, page 83.

## COURSES LEADING TO THE A.B. DEGREE

The courses of study leading ordinarily to the degree of Bachelor of Arts are the General Course in Science and the Course Preparatory to Medicine. Attention is called also to the combined courses in Science and Engineering. A similar combination can also be made in Science and Agriculture.

## GENERAL COURSE IN SCIENCE

To graduate from the General Course in Science the following requirements must be fulfilled:

1. The student must complete the work indicated in the prescribed list, except that physics and chemistry will not be required of students who have had one-year courses in these subjects in an accredited high school or acceptable equivalent courses elsewhere.

2. There must be obtained from the five groups of electives the number of hours' credit mentioned under each group. The physics and chemistry of the prescribed list may be applied on the requirements of Groups 1 and 2. Students who have had three years of work in foreign language in an accredited high school, or an equivalent course elsewhere, will be relieved from the requirement of Group 4. Those who have had one year or two years of high school language may be relieved from 4 hours or 8 hours respectively of the requirement of Group 4. No credit is given for a part of the first university year of any language.

3. A total credit of at least 20 hours must be secured in some one of the divisions of the major elective list. Not more than 40 hours' work (exclusive of thesis) in any one of these divisions may be applied toward graduation. In arranging the subjects to be counted toward the major requirement the student is advised to consult with the head of the department in which the major is taken.

4. The student must secure enough additional credits from the general elective list to complete the graduation requirement of 130 hours.

## GENERAL CLASSIFICATION OF SUBJECTS

## PRESCRIBED LIST

Chemistry 1  
Physics 2a, 2b (or 1, 3)  
Rhetoric 1\*  
Military Science 1, 2  
Physical Training—  
    Men, 1, 3  
    Women, 7, 9

## GROUP ELECTIVES

*Group 1. 8 hours required*

Mathematics  
Physics  
Astronomy  
Logic (Philosophy 1)  
Mineralogy (Geology 5)

*Group 2. 8 hours required*

Chemistry  
Geology  
Household science  
Bacteriology (Botany 5)

*Group 3. 8 hours required*

Botany  
Zoology  
Physiology  
Psychology  
Entomology

*Group 4. 16 hours required*

Foreign language

*Group 5. 8 hours required*

English literature  
History  
Political science  
Economics  
Philosophy  
Education

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\*Those students who show by examination a proficiency in composition sufficient to qualify them for the second semester's work in Rhetoric 1 may be excused from the first semester's work. See page 81.

## MAJOR ELECTIVES

Astronomy  
Botany  
Chemistry  
Education  
Entomology or zoology  
Geology (including mineralogy and physical geography)  
Household science  
Library science  
Mathematics  
Physics  
Physiology  
Psychology  
Zoology or entomology

## GENERAL ELECTIVES

The subjects offered as general electives include not only those branches given by the departments of this College, but also those in history, economics, languages, literature, and philosophy, given in the College of Literature and Arts; those in agronomy, animal husbandry, and horticulture, given in the College of Agriculture; and certain courses given in the College of Engineering and in the Library School afford abundant material from which elections may be made.

Approximately one-third of the work to be counted toward graduation may be selected, subject to the approval of the Dean, from the subjects given in other colleges of the University, if the student so desires.

## THESIS

A thesis course may be taken in any department (subject to the approval of the head thereof) in which the student has done 20 hours of major work preceding his senior year. Students desiring to take a thesis course in geology or mineralogy may add to their credits in those subjects the credits received for chemistry; and students in physiology may add to their credits in that subject those in zoology and bacteriology. Only students graduating with a thesis will, as a rule, be selected for fellowships, scholarships, and other similar university honors. Candidates for special honors are required by the general regulations of the University to write a thesis.

# PROSPECTUS OF COURSE IN SCIENCE

## FIRST YEAR

Fifteen to eighteen hours a week, including military and physical training, must be chosen each semester.

Military science and tactics are required of all male students. Drill extends through the freshman and sophomore years, and tactics through the second semester of the freshman year.

Physical training is required of all freshmen, men and women, two hours for men and three hours for women.

The following subjects are open to freshmen:

### FIRST SEMESTER

*Prescribed Subjects*<sup>1</sup>: Chemistry 1; Rhetoric 1; Military 2; Physical Training 1 and 1a for men; 7 and 9 (Physiology 6), for women.

*Group 1*: Astronomy 1; Mathematics 2, 4.

*Group 2*: Chemistry 1a, Chemistry 3 (for those who have had Chemistry 1 or its equivalent); Geology 1, 3, 5<sup>2</sup>, 14, 23; Household Science 2.

*Group 3*: Botany 2, 4, 11; Entomology 1; Physiology 4; Zoology 1.

*Group 4*: French 1; German 1, 4 (for those offering two units for entrance); Greek 1, 3, 5, 7; Latin 1 (for those offering three units for entrance); Spanish 1.

*Group 5*: Economics 7, 26; History 1.

*General Electives*: See statement on page 150.

### SECOND SEMESTER

*Prescribed Subjects*: Rhetoric 1; Military 1, 2; Physical Training 1 and 1a, for men; 7 and 9 (Physiology 6), for women.

*Group 1*: Astronomy 4; Mathematics 3a, 6.

*Group 2*: Chemistry 1, 1a, 2, 3, and 13a (after Chemistry 2 and 3); Geology 1a, 6<sup>3</sup>, 8, 10, 12; Household Science 1.

*Group 3*: Botany 1, 16; Entomology 1, 3; Zoology 2, 1, 16.

*Group 4*: French 1; German 3, 5, 6 (after German 4); Greek 1, 4, 6, 8; Latin 1; Spanish 1.

*Group 5*: Economics 22, 26; History 1, 11.

*General Electives*: See statement on page 150.

<sup>1</sup> See page 148, requirement 1.

<sup>2</sup> Prerequisite: Chemistry.

<sup>3</sup> Prerequisite: Geology 5.

### LIBRARY SCIENCE

Library science has been added to the list of major electives to meet the needs of those who are preparing for positions in scientific libraries, but are unable to complete the course as outlined in the Library School.

### PREPARATION OF SCIENCE TEACHERS

To graduate with a preparation for the teaching of science in the secondary schools, the student must meet the requirements of the general science course, choosing his major in that group containing the subjects which he wishes especially to teach, and adding Education 1, 3, and 7, Psychology 1, Philosophy 1, and at least four hours more in education or psychology.

As to the amount and the character of the work which should be taken in the major subject and those allied to it, the student should consult with the head of the department in which the principal work is taken. See also the circular of the School of Education.

### COURSE IN SCIENCE AND ENGINEERING

A graduate of the College of Science whose mathematical training includes the work of the calculus, who has had the usual college course in physics, and sufficient training in the principles of mechanics to enable him to begin the mechanics of the junior year, may receive the degree of Bachelor of Science in Engineering upon the completion of 68 semester hours of work in engineering (including thesis) under the direction of the faculty of the College of Engineering. This work may ordinarily be done in two academic years. Candidates for the degree in the department of architecture are not required to be prepared in calculus or mechanics, but should have special preparation in drawing.

### HOUSEHOLD SCIENCE

The courses of instruction given in this department are planned to meet the needs of three classes of students: (a) those students who specialize in other lines of work, but desire a knowledge of the general principles and facts of household science; (b) those students who wish to make a specialty of household science for the purpose of teaching the subject in secondary schools and colleges; (c) those students who wish some knowledge of the principles underlying the work of dietitians.

Household science may be taken as a major in the College of Science by meeting the requirements concerning majors as pre-

scribed in the General Course in Science. Holders of scholarships in household science may take the subject as a major or may take the following suggested course, arranged especially to meet the needs of those preparing to teach the subject.

Students who have had three years of work in foreign language in an accredited high school, or an equivalent course elsewhere, will be relieved from the requirement of 16 hours of foreign language. Those who have had one year or two years of high school language may be relieved from 4 hours or 8 hours, respectively, of this requirement. No credit is given for a part of the first university year of any language.

The student must secure enough additional credits from the general elective list as described in the General Course in Science to complete the graduation requirement of 130 hours.

### Suggested Course for Teachers of Household Science

FIRST SEMESTER		FIRST YEAR		SECOND SEMESTER	
	S. H. <sup>1</sup>				S. H. <sup>1</sup>
Chemistry 1.....	5		Household Science 1.....	3	
Household Science 2.....	2		Chemistry 2 and 3.....	5	
Zoology 1.....	5		Rhetoric 1.....	3	
Rhetoric 1.....	3		Mathematics 4.....	2	
Physical Training 7 and 9.....	2		Art and Design 1.....	2	
			Physical Training 7.....	1	
	17			16	
		SECOND YEAR			
Chemistry 13a.....	5		Chemistry 9 and 9c.....	5	
Household Science 7.....	2		Household Science 12.....	3	
Household Science 6.....	3		English 2.....	4	
English 1.....	4		Economics 2.....	2	
Art and Design 12.....	3				
	17			14	
		THIRD YEAR			
Physiology 4.....	5		Household Science 3.....	2	
Physics 2a and 2b.....	4		Household Science 5.....	3	
Household Science 10.....	2		Botany 5.....	5	
Foreign language and electives.....	4		Foreign language and electives.....	5	
	15			15	
		FOURTH YEAR			
Household Science 4.....	5		Household Science 11.....	3	
Education 1.....	5		Education 6.....	2	
Household Science 13.....	1		Electives .....	10	
Electives .....	4				
	15			15	

The following subjects are suggested as electives for the junior and senior years: Psychology 1, 2; Botany 1; foreign language.

<sup>1</sup> Semester hours. For definition see page 257.

## COURSE PREPARATORY TO MEDICINE

The following course of three years' work, outlined for persons who are preparing for the study of medicine, includes the subjects offered in the first year of a standard course in medicine, with the exception of anatomy, together with the two years' work in arts and general science which is now required for admission to the better medical schools. It is intended to prepare students to enter upon the work of the second year of the professional course in medicine.

A student who has completed the course outlined below and who then completes a year's work in medicine in a recognized medical school, including work in human anatomy, the physiology of the special senses and of the nervous system, therapeutics, general pathology, pathological anatomy, and surgical pathology, may receive credit by transfer for this year of medical work, and thus receive the degree of Bachelor of Arts from the University of Illinois. Under this plan the student may ordinarily obtain the two degrees of Bachelor of Arts and Doctor of Medicine with six years' work, and is able to go more deeply than would otherwise be possible into the fundamental sciences upon which medical studies are based.

## Course Preparatory to Medicine

FIRST SEMESTER		FIRST YEAR		SECOND SEMESTER	
	S. H. <sup>1</sup>				S. H. <sup>1</sup>
General Chemistry (Chem. 1).....	5	Descrip. Inorg. Chem. (Chem. 2)....	2		
Rhetoric and Themes (Rhet. 1).....	3	Qualitative Analysis (Chem. 3).....	3		
Trigonometry (Math. 4).....	2	Rhetoric 1.....	3		
Zoology 1.....	5	Zoology 2.....	5		
Military (Mil. 2).....	1	Military (1, 2).....	2		
Physical Training.....	1	Physical Training.....	1		
Total .....	17	Total .....	16		
		SECOND YEAR			
	S. H.				S. H.
German 1 or 4, or Latin <sup>2</sup> .....	4	German 3 or 5 or 6 or Latin <sup>2</sup> .....	4		
Zoology 3.....	3	Zoology 3.....	3		
Quantitative Analysis (Chem. 5a)...	5	Organic Chem. (Chem. 9, 9c).....	5		
Physics 2a, 2b.....	4	Physics 2a, 2b.....	4		
Military 2.....	1	Military 2.....	1		
Total .....	17	Total .....	17		
		THIRD YEAR			
	S. H.				S. H.
German 4.....	4	German 5 or 6.....	4		
Histology (Physiology 1).....	5	Physiology 2.....	10		
Physiological Chem. (Chem. 15).....	5	Bacteriology (Botany 5).....	5		
Psychology 1, 9.....	5				
Total .....	19	Total .....	19		

<sup>1</sup> Semester hours. For definition see page 257.

<sup>2</sup> If Latin has not been offered for entrance.



## FOURTH YEAR

Students who can afford it would do well to spend a fourth year in continuing this course. For such students no group requirements are *prescribed*—each is given free choice in selecting what he needs to round out his general education, or to prepare to specialize in some line of his future work; a selection from the following courses is recommended: Bacteriology; Chemistry 5b, 5c, 9a, 9b, 14, 21, 22, 31, 105, and 106; Entomology 2, 3; Physiology 5; Psychology 113; Zoology 7, 8, 13, 13a; modern languages; and studies included in Group 5 of the general course in science. Upon the completion of this fourth year, the student takes his baccalaureate degree before going to the college of medicine.

## COURSES LEADING TO THE B.S. DEGREE

The following courses of instruction in this College lead ordinarily to the degree of Bachelor of Science.

## COURSE IN CERAMICS

To graduate in ceramics the student must follow one of the courses outlined below. The conditions are such that little election can be allowed.

Special courses will be arranged for those who wish a limited amount of work in ceramics, but those pursuing them will not be entitled to a degree and will not be recognized as graduates.

## Course in Ceramics

## FIRST YEAR

FIRST SEMESTER	S.H. <sup>1</sup>	SECOND SEMESTER	S.H. <sup>1</sup>
Chemistry 1.....	5	Chemistry 2 & 3.....	5
Adv. Algebra (Math. 2).....	3	Analyt. Geom. (Math. 6).....	5
Trig. (Math. 4).....	2	Descript. Geom. (G. E. D. 2).....	3
Gen. Eng. Drawing 1.....	3	Rhetoric 1.....	3
Rhetoric 1.....	3		
Mil. & Phys. Tr. 1, 1a.....	2	Mil. & Phys. Tr. 1a.....	2
	18		18

## SECOND YEAR

Physics 1 & 3.....	5	Physics 1 & 3.....	4
Chemistry 5a.....	5	Chemistry 5b.....	5
Calculus (Math. 8a).....	5	Elements of Mech. (T. & A. M. 14).....	4
Military Drill.....	1	Ceramic Materials (Cer. 1).....	3
		Military Drill.....	1
	16		17

<sup>1</sup> Semester hours. For definition see page 257.

## THIRD YEAR

German 4 or French 1 or 2.....	4	German 6 or French 1 or 2.....	4
Winning & Preparation (Cer. 2)....	3	Body Making (Cer. 5).....	5
Indust. Calc. (Cer. 3).....	3	Designing & Shaping (Cer. 12).....	3
Strength of Materials (T. & A. M. 15) .....	3	Theory of Silicates (Cer. 17).....	3
Mining Methods (Min. 3).....	2	Surveying (C. E. 10).....	2
	15		17

## FOURTH YEAR

Mineralogy (Geol. 5).....	5	Eng. Geol. (Geol. 13).....	5
Glazes (Cer. 6).....	5	Glass (Cer. 8).....	3
Cements (Cer. 10).....	3	Steam Engines & Boilers (M. E. 11) 3	
Drying & Burning (Cer. 4).....	4	Thesis (Cer. 11).....	5
	17		16

## Course in Ceramic Engineering

## FIRST YEAR

## FIRST SEMESTER

S. H.<sup>1</sup>

Chemistry 1.....	5
Adv. Algebra (Math. 2).....	3
Trig. (Math. 4).....	2
Gen. Eng. Drawing 1.....	3
Rhetoric 1.....	3
Mil. & Phys. Tr. 1, 1a.....	2
	18

## SECOND SEMESTER

S. H.<sup>1</sup>

Chemistry 2 & 3.....	5
Analyt. Geom. (Math. 6).....	5
Descript. Geom. (G. E. D. 2).....	3
Rhetoric 1.....	3
Mil. & Phys. Tr.....	2
	18

## SECOND YEAR

Physics 1 & 3.....	5	Physics 1 & 3.....	4
Chemistry 5a.....	5	Chemistry 5b.....	4
Calculus (Math. 7).....	5	Calculus (Math 9).....	3
Military Drill.....	1	Theoret. & App. Mechan. 7.....	3
		Ceramic Materials (Cer. 1).....	3
		Military Drill.....	1
	16		18

## THIRD YEAR

German 4 or French 1 or 2.....	4	German 6 or French 1 or 2.....	4
Winning & Preparation (Cer. 2)....	3	Body Making (Cer. 5).....	5
Indust. Calc. (Cer. 3).....	3	Designing & Shaping (Cer. 12).....	3
Analyt. Mechanics (T. & A. M. 8) 2½		Steam Engines & Boilers (M. E. 11) 3	
Resist. of Materials (T. & A. M. 9 3½		Surveying (C. E. 10).....	2
	16		17

## FOURTH YEAR

Glazes (Cer. 6).....	5	Engineering Geol. (Geol. 13).....	5
Cements (Cer. 10).....	3	Ceramic Constr. (Cer. 9).....	5
Drying & Burning (Cer. 4).....	4	Glass (Cer. 8).....	3
Mining Methods (Min. 3).....	2	Thesis (Cer. 11).....	4
Chemistry 65.....	2		
	16		17

## COURSE IN CHEMISTRY

A student may pursue a course in general science having chemistry as a major subject by conforming to the group requirements as outlined on page 148. Upon the completion of the course the candidate is granted the degree of Bachelor of Arts.

<sup>1</sup> Semester hours. For definition see page 257.

For the more specialized training of the chemist the following course, largely prescribed, has been arranged. It leads to the degree of Bachelor of Science in chemistry.

Preliminary preparation in German equivalent to two years of high school work or one year of university work is advised. Students who are unable to offer this may take German 1 and 3 in the freshman year, but will be required to take German 4 and 5 or 6 in place of other electives.

## Course in Chemistry

## FIRST YEAR

FIRST SEMESTER		SECOND SEMESTER	
	S. H. <sup>1</sup>		S. H. <sup>1</sup>
General Elementary Chemistry (Chem. 1).....	5	Analytical Geometry (Math. 6).....	5
Trigonometry (Math. 4).....	2	Descriptive Inorganic Chemistry (Chem. 2).....	2
Advanced Algebra (Math. 2).....	3	Qualitative Analysis (Chem. 3).....	3
German 4.....	4	German 5 or 6.....	4
Military (Mil. 2).....	1	Military (Mil. 2).....	1
Gymnasium (Phys. Tr.).....	1	Drill Regulations (Mil. 1).....	1
		Gymnasium (Phys. Tr.).....	1
Total .....	16	Total .....	17

## SECOND YEAR

	S. H.		S. H.
French 1.....	4	French 1.....	4
Quantitative Anal. (Chem. 5a).....	5	Advanced Anal. Chem. (Chem. 5b).....	5
Physics 1, 3.....	5	Rhetoric 1.....	3
Rhetoric 1.....	3	Physics 1, 3.....	4
Military (Mil. 2).....	1	Military (Mil. 2).....	1
Total .....	18	Total .....	17

## THIRD YEAR

	S. H.		S. H.
Mineralogy (Geology 5).....	5	Organic Chemistry (Chem. 14, 9b).....	5
Organic Chemistry (Chem. 14, 9a).....	5	Physical Chem. (Chem. 31, 33).....	5
Seminar (Chem. 93).....	1	Seminar (Chem. 93).....	1
Economics.....	2	Electives.....	3
Differential and Integral Calculus (Math. 8a).....	5	English 1 or History 3.....	4
Total .....	18	Total .....	18

## FOURTH YEAR

	Hours		Hours
Seminar (Chem. 93).....	1	Seminar (Chem. 93).....	1
Thesis.....	5	Ind. Chem. (Chem. 61).....	2
Electives in Chem.....	5	Thesis.....	5
Electives, history, economics or equivalent.....	5	Electives.....	8
Total .....	16	Total .....	16

The electives of the junior year and ten hours of the electives of the senior year must be taken elsewhere than in the chemistry department. Some biological subject, philosophy, history, and economics are recommended.

<sup>1</sup> Semester hours. For definition see page 257.

## COURSE IN CHEMICAL ENGINEERING

The work of the technical chemist or superintendent is frequently so closely associated with mechanical and other engineering lines as to make a knowledge of these subjects essential. To meet these conditions, the following four-year course in chemistry and related engineering subjects has been arranged. The degree given is that of Bachelor of Science in chemical engineering.

Preliminary preparation in German equivalent to two years of high school or one year of university work is *prescribed*. It is also advised that students intending to take this course be prepared to offer mechanical drawing and manual training for entrance.

Where this preliminary training is lacking, students are advised, if possible, to register in shop work and general engineering drawing during the early years of their course.

## Course in Chemical Engineering

FIRST SEMESTER		FIRST YEAR		SECOND SEMESTER	
	S. H. <sup>1</sup>				S. H. <sup>1</sup>
General Elementary Chemistry		Analytical Geometry (Math. 6).....	5		
(Chem. 1).....	5	Descriptive Inorganic Chemistry			
Trigonometry (Math. 4).....	2	(Chem. 2).....	2		
Advanced Algebra (Math. 2).....	3	Qualitative Analysis (Chem. 3).....	3		
German 4.....	4	German 5 or 6.....	4		
Military (Mil. 2).....	1	Military (Mil. 2).....	1		
Gymnasium (Phys. Tr.).....	1	Drill Regulations (Mil. 1).....	1		
		Gymnasium (Phys. Tr.).....	1		
Total .....	16	Total .....	17		
		SECOND YEAR			
	S. H.				S. H.
Differential and Integral Calculus (Math. 8a).....	5	Analytical Mech. (T. & A. M. 7)....	3		
Quantitative Anal. (Chem. 5a).....	5	Advanced Analytical Chemistry			
Physics 1, 3.....	5	(Chem. 5b).....	5		
Rhetoric 1.....	3	Rhetoric 1.....	3		
Military (Mil. 2).....	1	Physics 1, 3.....	4		
		Military (Mil. 2).....	1		
Total .....	19	Total .....	16		
		THIRD YEAR			
	S. H.				S. H.
Gas and Fuel Anal. (Chem. 65).....	2	Inorganic Preparation (Chem. 61)....	2		
Mineralogy (Geol. 5).....	5	Physical Chem. (Chem. 31, 33).....	5		
Analytical Mech. (T. & A. M. 8).....	2½	Organic Chem. (Chem. 14, 9b).....	5		
Resistance of Materials (T. & A. M. 9).....	3½	Chem. Technology (Chem. 6).....	2		
Organic Chem. (Chem. 14, 9a).....	5	Seminar (Chem. 93).....	1		
Seminar (Chem. 93).....	1	Total .....	15		
Total .....	19				

<sup>1</sup> Semester hours. For definition see page 257.

FOURTH YEAR

	S. H.		Hours
Assaying (Chem. 69).....	2	Electives in Chemistry.....	3
Electro-chemistry (Chem. 35).....	3	Thesis (Chem. 11).....	5
Economics, philosophy or equivalent .....	3	Steam Engines and Boilers (M. E. 11).....	3
Metallurgy (Chem. 7).....	2	E. E. 1.....	2
Thesis (Chem. 11).....	5	Seminar (Chem. 93).....	1
Seminar (Chem. 93).....	1	Economics or Philosophy.....	3
Totals .....	16		17

# THE COLLEGE OF ENGINEERING

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For a description of the *buildings* occupied by this College, see page 56; for *collections* belonging to it (architecture, civil engineering, electrical engineering, and mechanical engineering), see page 66; for *clubs* and *societies auxiliary to its courses of study*, see page 114; for *fees*, see page 122; for *honors*, see page 106; for *honorary societies*, see page 113.

## GENERAL STATEMENT

The purpose of the College is to train young men for the profession of engineering. In arranging its courses of study and practice, cultural subjects are interwoven with the strongly theoretical subjects which underlie and reinforce the more practical developments of the several departments. The instruction of the classroom and the practice afforded by the library, the drafting-room, and the laboratory proceed hand in hand. Throughout his course the student works upon problems and proceeds by methods similar to those which enter into the experience of the practicing engineer.

## ADMISSION

See the general statement of the entrance requirements of the University, page 75.

## SPECIAL STUDENTS

See the statement of the general regulations of the University in regard to special students, page 83.

## DESCRIPTION OF DEPARTMENTS

The College of Engineering comprises the following departments:  
DEPARTMENT OF ARCHITECTURE, with courses in—

Architecture

Architectural Engineering

DEPARTMENT OF CIVIL ENGINEERING

DEPARTMENT OF ELECTRICAL ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING

DEPARTMENT OF MINING ENGINEERING

DEPARTMENT OF MUNICIPAL AND SANITARY ENGINEERING

DEPARTMENT OF THEORETICAL AND APPLIED MECHANICS

DEPARTMENT OF PHYSICS

DEPARTMENT OF RAILWAY ENGINEERING<sup>1</sup>, with courses in—

Railway Civil Engineering

Railway Electrical Engineering

Railway Mechanical Engineering

## ARCHITECTURE

The department of architecture offers two courses leading to the first degree, the course in architecture and the course in architectural engineering. The aim of these courses is to give the broadest preparation for the practice of architecture.

The course in architecture aims primarily to train the student to produce correct, thoughtful, and beautiful works of architecture. The schedule of studies includes a broad field of liberal and scientific subjects to supply the background for creative work and to give a knowledge of the principles involved in the processes of safe and economical construction. The course also includes much free-hand drawing for the purpose of training the eye to recognize correct proportion and training the hand to skillful and rapid drawing. The main portion of the course, however, consists of the study of architectural forms and principles and their application in architectural design.

The course in architectural engineering gives a thorough groundwork in mathematics and applied mechanics, and includes such studies as strength of materials, bridge, mill, and tall building construction, reinforced concrete, etc. The general principles of these subjects are applied to all forms of building construction in a course given in the senior year, known as architectural engineering. While specializing in construction, this course includes also the study of the forms and principles of architecture through such subjects as free-hand drawing, architectural history, architectural drawing, and architectural design.

Both courses in architecture prepare the student for the examinations of the Illinois State Board of Examiners of Architects, and graduates of the department are exempt from examinations

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<sup>1</sup> The School of Railway Engineering and Administration offers, in addition of the three courses named here, courses in railway transportation and railway traffic and accounting under the direction of the department of economics of the College of Literature and Arts. See pages 139 and 140 above.

required for entrance into the American Institute of Architects, and from the preliminary examination for the prize in Architecture of the American Academy at Rome. The Plym Fellowship in Architecture is awarded annually to a graduate of the department. This prize amounts to \$1,000 and provides for one year of travel for the study of architecture abroad. It is awarded by competition.

Students intending to take up the study of architecture should take free-hand and mechanical drawing and general history in high school.

#### EQUIPMENT

The collections of rendered and working drawings, lantern slides, plates, photographs, casts, specimens of American woods, building materials, and appliances are noted under "Collections" on page 66. A Zeiss epidiascope is used for direct projection of photographs, colored plates, etc., and a double electric lantern for projecting two pictures on the screen at once for comparative study. Geometrical and architectural models are lighted by a light fixed at the conventional angle for demonstration of the subjects of shades and shadows and conventional rendering. Extensive wall space in the corridors of the department and in all drafting rooms has been prepared for exhibition purposes, and a collection of instructive and interesting drawings is constantly displayed. The department occupies the entire fourth floor of Engineering Hall, and a large part of the third; its quarters include drafting rooms for undergraduate and graduate work, library, lecture rooms, studios for free-hand drawing, etc.

#### CIVIL ENGINEERING

The purpose in this department is to furnish a course of theoretical instruction, accompanied and illustrated by a large amount of practice. While the instruction aims to be practical by giving the student information and practice directly applicable in his future professional work, the prime object is the development of the mental faculties. The power to acquire information and the ability to use it are held to be of greater value than any amount of so-called practical knowledge.

#### EQUIPMENT

This department has an equipment of compasses, engineers' transits, solar transits, levels—ordinary and precise—plane tables, sex-



tants, chronometers, barometers, etc. The department is also provided with a collection of structural shapes, including full-sized joints of an actual railroad bridge, sections of columns, I-bars, etc., and with lithographs, photographs, and blue-prints of bridges and buildings.

The *cement laboratory* occupies rooms in the Mechanical Engineering Laboratory, and is provided with slate tables, testing machines, molding machines, sieves, etc., and sample barrels of hydraulic cement, varieties of sand, and other necessary materials.

The *road laboratory* occupies a room in the Mechanical Engineering Laboratory, and is provided with machines for testing the resistance of macadam material to impact and abrasion and for making the cementation test. The laboratory is also supplied with rattlers and other devices for testing paving material.

## ELECTRICAL ENGINEERING

This department provides a course of study in theoretical and applied electricity. The first two years of work are substantially the same as in the other engineering courses, including practical work in drafting room and shop, as well as instruction in the fundamental principles of mathematics and physics. With the third year the fundamental studies relate more directly to electrical engineering. A course in dynamo machinery is followed by the theory of alternating currents, while laboratory and design courses emphasize underlying principles. Technical courses cover the generation, transmission, and distribution of electric power, and its various applications. In the laboratory a study of dynamo characteristics is followed in the fourth year by progressive experiments involving the operation of electrical machinery in principle and practice. Investigation of the problems of power distribution is a feature of advanced laboratory and thesis work.

## EQUIPMENT

The 500 kilowatt power plant of the University supplies the electrical engineering laboratory with the current needed for its operation.

The power equipment in the electrical engineering laboratory includes forty direct current machines with a total capacity of 375 kilowatts, twenty alternating current machines with a total capacity of 300 kilowatts, and fifty transformers with a total capacity of 350

kilowatts. A 17-panel experimental switchboard affords adequate distribution and control.

The instrument room contains standards for the calibration of commercial instruments of all types. There are two hundred and fifty portable instruments for experimental work. A new 240-ampere-hour storage battery has been installed. The graduate laboratory contains much apparatus for research work, including four oscillographs, one 2000-cycle alternator, one 200,000-volt transformer, and apparatus for high voltage direct current investigations. The photometer room contains apparatus for tests of the various light sources. Two special 100-line switchboards are connected with cables and apparatus for experiments in telephony. The equipment for electrometallurgical work includes one 30-kilowatt induction furnace, one 25-kilowatt arc furnace, two 30-kilowatt resistance furnaces, and an annealing furnace.

## MECHANICAL ENGINEERING

The courses in mechanical engineering are planned to present the theory and practice involved in the generation and transmission of power, and in the design, construction, operation, and testing of machinery of all kinds.

### EQUIPMENT

To supplement and amplify the theoretical work of the classroom, the department is provided with designing rooms and laboratories as follows:

*The Designing Rooms* are equipped with drawing tables, and are supplied with reference books, files of trade catalogs, gear charts, and collections of blue-prints. A collection of kinematic models, sectional steam specialties, lantern slides, and photographs is also available.

*The Mechanical Engineering Laboratory* is equipped with machines and testing instruments for instruction in steam engineering, gas power engineering, refrigeration, heating, and ventilation. Among the more important pieces of apparatus are the 210 h. p. experimental boiler, equipped with chain-grate stoker, fuel economizer, and induced draft; a separately fired steam superheater; a number of types of throttling, high speed automatic, and Corliss steam engines; several steam condensers; a compound two-stage air compressor; a large compound duplex steam pump; a Kerr steam

turbine; a DeLaval turbo-pump; a 200,000 lb. Lea water-flow; a 10-ton ammonia compression refrigerating machine; a number of typical gas, gasoline, and oil engines; a 50 h. p. suction gas producer, and several house-heating boilers and furnaces. The central heating and power plant contains a variety of types of boilers, stokers, pumps, and engines in commercial service.

*The Shop Laboratories* are provided with suitable machinery and apparatus to illustrate the several shop processes involved in the manufacture of machinery. In these laboratories emphasis is given to the engineering principles involved in machine construction and to the important problems of scientific shop management. These laboratories include the *Wood Shop* with an equipment of benches, lathes, machinery, and small tools needed in pattern construction; the *Foundry* equipped with cupola, brass furnaces, core ovens, molding machines, and facilities for bench and floor molding; the *Forge Shop* equipped with forges, anvils and small tools, a steam hammer, a power-driven punch and shear, and with gas and electric furnaces; and the *Machine Shop* with an equipment of lathes, planes, shapers, milling machines, grinders, boring mills, drill presses, and with typical small tools and fixtures used in manufacturing.

### MECHANICS, THEORETICAL AND APPLIED

The courses in theoretical and applied mechanics are designed to meet the needs of students of engineering.

The *Laboratory of Applied Mechanics* comprises the materials testing laboratory and the hydraulic laboratory. The materials laboratory is equipped with testing machines for tension, compression, flexure, and torsion, and for testing various kinds of structural materials. The equipment includes a testing machine having a capacity of 600,000 pounds, arranged to take large and bulky pieces in tension, compression, and flexure. The hydraulics laboratory has a standpipe, pumps, water motors and turbine, measuring pits, Venturi meters, weir conduits, meter rating conduit, orifice boxes, weir boxes, and apparatus for experimental work on flow of water through pipes, hose, and nozzles. The University pumping station furnishes a supply of water at pressures up to 100 pounds a square inch.

### MINING ENGINEERING

The department of mining engineering offers courses of instruction relating to the science and practice of mining and metallurgy to train young men for the various phases of mineral industry.

The work of the department adds to the usual courses in mathematics, languages, chemistry, physics, geology, and general engineering, specialized work in mining, such as mine surveying, mine ventilation, mining machinery, coal washing, and ore concentration, metallurgy, administration and organization of mines, mining law, and the design of mining and metallurgy structures.

In addition to its work of instruction, the department concerns itself with the development and dissemination of such scientific facts as are likely to be of service in improving the practice of mining, with reference to efficiency in operation, to the security of life in the mines, and to the conservation of the fuel and other mineral resources of the state.

#### EQUIPMENT

The drawing rooms contain the catalogs of the manufacturers of mining machinery with a complete card index, the standard reference books on mine drafting, models of mine structures, and a collection of blue prints and drawings of mine structures.

The mine-gas and safety-lamp laboratory contains safety lamps of different types, electric and magnetic locking appliances, a dark room for photometric work, an Oldham safety-lamp testing apparatus, and appliances for gas and dust analysis.

The coal washing and ore dressing laboratory contains for crushing, rolls, gyratory and jaw crushers, and a 500-pound 3-stamp battery; for screening and sizing, trommels, shaking and vibrating screens, and V boxes; for concentrating and cleaning, pan, piston and pulsating jigs, bumping table, vanner, concentrating table, and slimer. These machines can handle from 3 to 5 tons of coal and one ton of ore an hour. There is also a complete sampling and drying equipment, a cyanide testing plant, and other small appliances used for preliminary testing. Adjoining this laboratory is a chemical and assay laboratory equipped for the analytical work required in connection with coal washing and ore concentration.

The explosives and drilling laboratory contains the principal types of rock drills, coal cutters, and a complete outfit for demonstrating the use of explosives.

#### MINE RESCUE STATION AND LABORATORIES

Coöperating with the department of mining engineering and with the State Geological Survey, the Federal Government has established at the University a mine rescue station. The purpose

of the station is to interest all connected with the mining industry in such modern appliances as breathing and resuscitation apparatus as part of the normal equipment of mines. At the station mine bosses and others are trained in the use of such apparatus, this service being rendered freely to all who may desire the benefits thereof.

The station offers to the student in mining engineering an opportunity for studying rescue and first aid work. Students are brought into contact with men in practice from all parts of Illinois and surrounding states who come to the station for training. About the present station as a nucleus other laboratories for experimental work in connection with mining are being developed, and are accessible for the use of students in mining engineering.

A laboratory is maintained jointly by the department of mining engineering, the State Geological Survey, and the United States Bureau of Mines for the study of mine dusts and mine gases. It is also available for the purpose of demonstration to university classes.

## MUNICIPAL AND SANITARY ENGINEERING

This course is designed to train for the varied duties of the engineer employed on the design, construction, and operation of public works and public utilities, and for general engineering work.

The methods of training are intended to develop power to take up and solve new problems connected with municipal public works, as well as to design and to superintend the ordinary constructions. Surveying, structural materials, and structural design are taught as in the civil engineering course. Chemistry and bacteriology are given so far as is necessary to a comprehension of the questions involved in water supply and sewage disposal; and instruction is given in mechanical and electrical engineering in the generation and transmission of power.

## PHYSICS

The department of physics occupies the Laboratory of Physics. This building supplies facilities and equipment for instruction and investigation in physics. Gas, distilled water, compressed air and vacuum, and direct and alternating electric currents of a wide range in amperes and in volts are available in all parts of the building. There is a collection of over 4,000 pieces of apparatus for the courses of instruction offered and also for advanced work, and only

a small part of the equipment is antiquated. New investigations can usually be started with the apparatus on hand. There are two workshops, one for the advanced students and instructors, and one for the mechanic of the department. The students' shop is equipped with lathes, drill press, bench tools, etc. The mechanic's shop contains lathes, milling machines, drill press, and other facilities for fine machine work.

The University library contains all the important sets of journals of physics and the related sciences in English, French, and German. The recent volumes of the physical journals, together with a collection of text-books, encyclopædias, dictionaries, and other reference books, are also found in the special library of the Laboratory.

### RAILWAY ENGINEERING\*

The department of railway engineering is organized to serve those who wish to prepare themselves for service in the technical departments of railways. The course in railway civil engineering adds to the fundamentals of a well-rounded engineering course a group of special subjects which concern the design, construction, and maintenance of the various details entering into the construction of track, track structures, and systems of railway signaling. The course in railway electrical engineering emphasizes the design and construction of those details peculiar to electric railway lines; the operation and performance of electric cars and locomotives; and the development of the more general problems which arise in the electrification of existing steam lines. The course in railway mechanical engineering is intended to meet the requirements of those who are especially interested in steam railroad equipment. It deals with the design, construction, and maintenance of various types of railway cars; with conditions affecting train resistance; with the design and operation of steam locomotives; and with tests disclosing their performance.

### EQUIPMENT

Three steam roads—the Illinois Central, the Cleveland, Cincinnati, Chicago & St. Louis, and the Wabash railroads—and an electric interurban road—the Illinois Traction System—enter Champaign and Urbana. The department enjoys the interest and coöperation of the officers of these railways, and is afforded by their courtesy

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\* See also *School of Railway Engineering and Administration*, page 216.

numerous opportunities for practical road tests and field work. The division shops of the C., C., C. & St. L. railroad are located at Urbana and provide additional opportunity for similar work.

The department owns and operates, jointly with the Illinois Central Railroad, a railway test car designed for experimental work on steam roads. It is fully equipped for making train resistance and locomotive performance tests, and during the last ten years has been in frequent operation in carrying on resistance and tonnage rating tests on the Illinois Central Railroad and on several eastern roads.

For work on electric roads the department owns also an electric test car, of the interurban type, especially designed and built for the University for experimental work. It is equipped with four 50 horse-power direct current motors and with the Westinghouse multiple control system, and is provided with instruments for recording power, speed acceleration, and the other data needed in road tests. Through the courtesy of the Illinois Traction System this car is operated on its lines, which enter the campus of the University.

The department laboratory equipment includes a drop-testing machine and a brake-shoe testing machine, both constructed in accordance with the standards of the Master Car Builders' Association. The drop-testing machine is designed for use in testing the strength of railroad rails, car axles, car couplers, and draft gears, and may be used in studies of the physical properties of structural materials of any sort. The brake-shoe testing machine supplies means for determining the wearing properties and frictional qualities of brake-shoes, such as are employed in regular service on railroad trains.

A locomotive testing plant, equipped from the original designs of the department, occupies a building 40 by 115 feet. The plant is devoted exclusively to making tests to determine the performance of locomotives. The locomotives tested are furnished by certain western railroad systems under an arrangement which insures the maintenance in the plant of a locomotive which at all times shall be of latest design.

Much of the work in the railway courses is given in the departments of civil, electrical, and mechanical engineering, and the shop and laboratory equipment of these departments is available for students of the railway department.

## SUGGESTED ELECTIVES

The following courses are suggested as electives for students in the College of Engineering whose time is not fully occupied with required work:

Accountancy, Art and Design 1; Astronomy 3 and 6; Chemistry 2, 3, 16, 31, 34, 35; economics; Geology 13; Mathematics 9a, 10, 16, 21a, 22a; Rhetoric 3, 7, 10, 13; Physics 15, 16, 17; Political Science 17; Library 12; Architecture 43, 44, 55, 57; Civil Engineering 4a, 5, 21, 22; Electrical Engineering 1, 2, 5, 6, 16, 29; Mechanical Engineering 7, 27, 30, 31; Railway Engineering 11, 61; *for students of architecture*, History 1, 9; landscape design; French and German.

## SUMMER READING

All engineering students not graduates of a literary college are required to complete prescribed courses of reading of a non-professional character during the summer vacations following the freshman and sophomore years. The purpose of the summer reading is to increase the acquaintance of the student with literature, history, and general science, to develop in him a taste for such reading, and to impress him with the importance of such knowledge not only as a source of individual enjoyment, but as a practical aid to engineers in their social and business relations.

A circular on summer reading is issued, containing a list of books from which the students may choose. The books have been selected for their value in providing general training, but an attempt has been made to include only readable and attractive works. A statement of the books read during the summer is required at the beginning of the next college year.

## GENERAL ENGINEERING LECTURES FOR FRESHMEN

One general lecture, sufficiently popular in character to interest and inspire young engineers, will be given each week. All freshman engineers are expected to attend this lecture.

## TRIPS OF INSPECTION

The departments of the College of Engineering arrange trips of inspection for their students, to supplement the theoretical instruction of the classroom. The time occupied by the trip is three or four days, and the works visited are usually in Chicago or Milwaukee. The trips are taken during term time under the supervision of Uni-



versity authorities. The inspection trip forms an integral part of the course, and it is expected that all students eligible will participate. Students can be excused from attendance by the head of the department only, and if so excused, they are required, during the period occupied by the trip, to perform a set schedule of work approved by the head of the department. Students whose standing is such that they can ill afford to take the time from their academic duties may be required to remain at the University.

Each student who participates in a trip is required to make a report or submit to an examination upon the work inspected.

### COURSES OF STUDY AND DEGREES

The courses of study leading to the degree of Bachelor of Science in the College of Engineering, as scheduled for the year 1912-1913, are given herewith in full. Each of the ten courses given may ordinarily be completed in a period of four years.

A graduate of the University of Illinois in architectural, civil, electrical, mechanical, mining, municipal and sanitary, or railway engineering may receive the degree of an allied course upon the completion of from thirty to thirty-six semester hours of work (including thesis) approved by the faculty. This work may ordinarily be done in one academic year.

A graduate of the Colleges of Liberal Arts of the University of Illinois, or of any college of equal standing, whose mathematical training includes the work of the calculus, who has had the usual course in physics, and who has had sufficient training in the principles of mechanics to enable him to begin the mechanics of the junior year, may receive the degree of Bachelor of Science in Engineering upon the completion of sixty-eight credit hours of work in engineering (including thesis) under the direction of the faculty. This work may ordinarily be done in two academic years. Candidates for the degree in the department of architecture are not required to be prepared in calculus or mechanics, but should have special preparation in drawing.

**Course Required for Degree of B. S. in Architecture****FIRST YEAR**

FIRST SEMESTER		SECOND SEMESTER	
	S. H. <sup>1</sup>		S. H. <sup>1</sup>
Math. 4 <sup>2</sup> —Trigonometry.....	2	Chem. 1a <sup>3</sup> or 1b—Inorg. Chem.....	4
Math. 2—Advanced Algebra.....	3	T. & A. M. 14—Elem. Mech.....	4
Rhet. 1—Rhetoric and Themes.....	3	Rhet. 1—Rhetoric and Themes.....	3
G. E. D. 2—Descriptive Geometry..	4	Arch. 32—Arch. and Freehand	
Arch. 31—Arch. and Freehand		Drawing .....	4
Drawing .....	4	Mil. 2—Military Drill.....	1
Mil. 2—Military Drill.....	1	Mil. 1—Drill Regulations.....	1
Phys. Tr. 1—Gymnasium.....	1	Phys. Tr. 1—Gymnasium.....	1
Total .....	18	Total .....	18

**SECOND YEAR**

Phys. 2a—Physics Lectures.....	2	Phys. 2a—Physics Lectures.....	2
Phys. 2b—Physics Laboratory.....	2	Phys. 2b—Physics Laboratory.....	2
T. & A. M. 15—Strength of Mater..	3	T. & A. M. 16—Strength of Mater..	3
Arch. 13—History of Arch.....	2	Arch. 14—History of Arch.....	2
Arch. 23—Freehand Drawing.....	2	Arch. 24—Freehand Drawing.....	2
Arch. 33—Design.....	3	Arch. 34—Design.....	3
Arch. 43—Spec. & Wkg. Drawings..	3	Arch. 44—Spec. & Wkg. Drwgs.....	3
Mil. 2—Military Drill.....	1	Mil. 2—Military Drill.....	1
Total .....	18	Total .....	18

**THIRD YEAR**

French or German.....	4	French or German.....	4
Arch. 15—History of Arch.....	2	Arch. 16—History of Arch.....	2
Arch. 25—Freehand Drawing.....	2	Arch. 26—Freehand Drawing.....	2
Arch. 35—Design.....	5	Arch. 36—Design.....	5
Arch. 45—Graphic Statics.....	3	Arch. 46—Graphic Statics.....	3
Arch. 55—Building Sanitation.....	1	E. E. 9—Building Illumination.....	1
Arch. 65—Theory of Arch.....	1	Arch. 66—Theory of Arch.....	1
Total .....	18	Total .....	18

**FOURTH YEAR**

Arch. 27—Freehand Drawing.....	2	Arch. 28—Freehand Drawing.....	2
Arch. 38—Thesis.....	0	Arch. 38—Thesis.....	7
Arch. 37—Design.....	7	Arch. 60—Special Lectures.....	1
Arch. 57—Heating & Ventilation.....	2	Arch. 68—Business Relations.....	3
Arch. 67—Theory of Form & Color..	2	English literature.....	3
English literature.....	3		
Econ. 2—Prin. of Econ.....	2		
Total .....	18	Total .....	16

<sup>1</sup> Semester hours. For definition see page 257.<sup>2</sup> The numbers refer to courses in the Description of Courses, page 255.<sup>3</sup> Students who have had chemistry in the high school equivalent to Chemistry 1b will register in Chemistry 1a.

Course Required for Degree of B. S. in Architectural Engineering

FIRST YEAR

FIRST SEMESTER

S. H.<sup>1</sup>

G. E. D. 1 <sup>2</sup> —Gen. Eng. Drawing.....	4
Math. 4—Trigonometry.....	2
Math. 2—Advanced Algebra.....	3
French 1, or German 1 or 4, or English 1, or Spanish 1.....	4
Arch. 20—Arch. and Freehand Drawing, or M. E. 41.....	3
Mil. 2—Military Drill.....	1
Phys. Tr. 1—Gymnasium.....	1

Total .....18

SECOND SEMESTER

S. H.<sup>1</sup>

G. E. D. 2 <sup>2</sup> —Descriptive Geometry..	4
Math. 6—Analytical Geometry.....	5
French 1, or German 3 or 5 or 6, or French 2, or Rhetoric 11, or Spanish 1.....	4
Arch. 8—Arch. Drawing, or M. E. 41.....	3
Mil. 2—Military Drill.....	1
Mil. 1—Drill Regulations.....	1
Phys. Tr. 1—Gymnasium.....	1

Total .....19

SECOND YEAR

Math. 7—Differential Calculus.....	5
Phys. 1—Physics Lectures.....	3
Phys. 3—Physics Laboratory.....	2
Rhet. 1—Rhetoric and Themes.....	3
Arch. 43—Spec. & Wkg. Drwgs.....	3
Arch. 4—Building Sanitation.....	2
Mil. 2—Military Drill.....	1

Total .....19

Math. 9—Integral Calculus.....	3
Phys. 1—Physics Lectures.....	2
Phys. 3—Physics Laboratory.....	2
Rhet. 1—Rhetoric and Themes.....	3
T. & A. M. 7—Analytical Mechanics	3
Arch. 44—Spec. & Wkg. Drwgs.....	3
Arch. 15a—Design.....	3
Mil. 2—Military Drill.....	1

Total .....20

THIRD YEAR

T. & A. M. 6—Engin. Materials.....	1
T. & A. M. 8—Analyt. Mech.....	2½
T. & A. M. 9—Res. of Mats.....	3½
Arch. 6—History of Arch.....	4
Chem. 1b or 1a <sup>3</sup> —Inorganic Chemistry.....	4
Arch. 11—Arch. Seminar.....	1
Econ. 2—Principles of Econ.....	2

Total .....18

T. & A. M. 10—Hydraulics.....	3
Arch. 5—Graphic Statics & Roofs.....	4
Arch. 6—History of Arch.....	4
Arch. 10—Estimating.....	1
Arch. 11—Arch. Seminar.....	1
M. E. 11—Steam Engines & Boilers.....	3
C. E. 10—Surveying.....	2

Total .....18

FOURTH YEAR

Arch. 57a—Heating & Ventilation....	3
Arch. 19—Arch. Engineering.....	3
Arch. 38—Thesis.....	1
Arch. 31a—Arch. Reading.....	1
Arch. 34a—Arch. Eng. Seminar.....	1
C. E. 12—Bridge Analysis.....	2
C. E. 13—Bridge Details.....	2
C. E. 24—Metal Structures.....	1
M. E. 32—Mech. Eng. Laboratory....	1

Total .....15

Arch. 68—Business Relations.....	3
Arch. 19—Arch. Engineering.....	3
Arch. 38—Thesis.....	3
Arch. 31a—Arch. Reading.....	1
C. E. 6—Masonry & Reinf. Con. Design.....	2
C. E. 14a—Bridge Design.....	2
E. E. 9—Electric Lighting.....	1

Total .....15

<sup>1</sup> Semester hours. For definition see page 257.

<sup>2</sup> The numbers refer to courses in the Description of Courses, page 255.

<sup>3</sup> Students who have had chemistry in the high school equivalent to Chemistry 1b will register in Chemistry 1a.

**Course Required for the Degree of B. S. in Civil Engineering<sup>1</sup>****FIRST YEAR**

FIRST SEMESTER		SECOND SEMESTER	
	S. H. <sup>1</sup>		S. H. <sup>1</sup>
G. E. D. 1 <sup>2</sup> —Gen. Eng. Drwg.....	4	G. E. D. 2—Descr. Geometry.....	4
Math. 4—Trigonometry.....	2	Math. 6—Analyt. Geometry.....	5
Math. 2—Adv. Algebra.....	3	French 1, or German 3 or 5, or	
French 1, or German 1 or 4, or		English 2, or Rhetoric 11, or	
English 1, or Spanish 1.....	4	Spanish 1.....	4
M. E. 41—Shop Practice.....	3	M. E. 41—Shop Practice.....	3
Mil. 2—Military Drill.....	1	Mil. 2—Military Drill.....	1
Phys. Tr. 1—Gymnasium.....	1	Mil. 1—Drill Regulations.....	1
	—	Phys. Tr. 1—Gymnasium.....	1
Total .....	18	Total .....	19

**SECOND YEAR**

Math. 7—Diff. Calculus.....	5	Math. 9—Integral Calculus.....	3
Phys. 1—Physics Lectures.....	3	Phys. 1—Physics Lectures.....	2
Phys. 3—Physics Laboratory.....	2	Phys. 3—Physics Laboratory.....	2
Rhet. 1—Rhetoric and Themes.....	3	Rhet. 1—Rhetoric and Themes.....	3
C. E. 21—Surveying.....	5	T. & A. M. 7—Analyt. Mech.....	3
Mil. 2—Military Drill.....	1	C. E. 22—Top. Surveying.....	4
	—	C. E. 23—Railroad Curves.....	1
Total .....	19	Mil. 2—Military Drill.....	1
		Total .....	19

**THIRD YEAR**

T. & A. M. 6—Eng. Matls.....	1	T. & A. M. 10—Hydraulics.....	3
T. & A. M. 8—Analyt. Mech.....	2½	C. E. 1—Road Engineering.....	2
T. & A. M. 9—Res. of Materials.....	3½	C. E. 20—Graphic Statics.....	2
C. E. 4—Railroad Surveying.....	5	Astron. 3 & 6, or Geol. 13.....	5
Chem. <sup>3</sup> 1b or 1a—Inorganic		M. E. 11—Steam Eng. & Boilers....	2
Chemistry .....	4	Econ. 2—Prin. of Economics.....	2
Total .....	16	Total .....	17

**FOURTH YEAR**

C. E. 5r—Masonry Construction.....	4	C. E. 6—Masonry & Reinf.	
C. E. 5l—Cement Lab. Practice.....	1	Con. Design.....	2
C. E. 12—Bridge Analysis.....	2	C. E. 14—Bridge Design.....	5
C. E. 13—Bridge Details.....	3	C. E. 15—Adv. Bridge Anal.....	2
C. E. 18—Tunneling.....	1	C. E. 16—Eng. Cont. & Spec.....	2
C. E. 24—Metal Structures.....	1	C. E. 25—Seminar.....	1
C. E. 30—Thesis.....	1	C. E. 30—Thesis.....	2
M. & S. E. 2—Water Supply Eng....	4	M. & S. E. 3—Sewerage.....	3
Total .....	17	Total .....	17

<sup>1</sup> Semester hours. For definition see page 257.<sup>2</sup> The numbers refer to courses in the Description of Courses, page 255.<sup>3</sup> Students who have had chemistry in the high school equivalent to Chemistry 1b will register in Chemistry 1a; those who have received credit for Chemistry 1a will register in Electrical Engineering 3 and 22.

## Course Required for the Degree of B. S. in Electrical Engineering

## FIRST YEAR

FIRST SEMESTER		SECOND SEMESTER	
	S. H. <sup>1</sup>		S. H. <sup>1</sup>
G. E. D. 1 <sup>2</sup> —Gen. Eng. Drwg.....	4	G. E. D. 2—Descr. Geometry.....	4
Math. 4—Trigonometry.....	2	Math. 6—Analyt. Geometry.....	5
Math. 2—Adv. Algebra.....	3	French 1, or German 3 or 5 or 6, or English 2, or Rhetoric 11, or Spanish 1.....	4
French 1, or German 1 or 4, or English 1, or Spanish 1.....	4	M. E. 41—Shop Practice.....	3
M. E. 41—Shop Practice.....	3	Mil. 2—Military Drill.....	1
Mil. 2—Military Drill.....	1	Mil. 1—Drill Regulations.....	1
Phys. Tr. 1—Gymnasium.....	1	Phys. Tr. 1—Gymnasium.....	1
Total .....	18	Total .....	19

## SECOND YEAR

Math. 7—Diff. Calculus.....	5	Math. 9—Integral Calculus.....	3
Phys. 1—Physics Lectures.....	3	Phys. 1—Physics Lectures.....	2
Phys. 3—Physics Laboratory.....	2	Phys. 3—Physics Laboratory.....	2
Rhet. 1—Rhetoric and Themes.....	3	Rhet. 1—Rhetoric and Themes.....	3
M. E. 24—Mach. Design & Mech.....	3	T. & A. M. 7—Analyt. Mech.....	3
M. E. 42—Machine Shop.....	2	Chem. <sup>3</sup> 1b or 1a—Inorg. Chem.....	4
Mil. 2—Military Drill.....	1	Mil. 2—Military Drill.....	1
Total .....	19	Total .....	18

## THIRD YEAR

T. & A. M. 6—Eng. Matrls.....	1	T. & A. M. 10—Hydraulics.....	3
T. & A. M. 8—Analyt. Mech.....	2½	E. E. 5—Alt. Currents.....	4
T. & A. M. 9—Res. of Materials.....	3½	E. E. 23—Elec. Eng. Lab.....	2
E. E. 3—Dynamo-Elec. Mach.....	3	Phys. 4—Elec. & Magn. Meas.....	2
E. E. 22—Electr. Eng. Lab.....	3	M. E. 13—Mech. Eng. Lab.....	3
Phys. 4—Elec. & Magn. Meas.....	2	Math. 9a—Integral Calculus.....	2
Chem. 4—Inorg. Chem. & Anal.....	4		
Total .....	18	Total .....	16

## FOURTH YEAR

E. E. 13—Seminar.....	1	E. E. 13—Seminar.....	1
E. E. 14—Adv. Alt. Currents.....	4	E. E. 17—Adv. Alt. Currents.....	4
E. E. 24—Elec. Eng. Lab.....	2	E. E. 27—Elec. Eng. Lab.....	2
E. E. 32—Electrical Design.....	2	E. E. 34—Elec. Des. & Power Pl.....	3
M. E. 15—Thermodynamics.....	3	E. E. 35—Thesis.....	3
Econ. 2—Prin. of Economics.....	2	Econ. 16—Econ. Prob.....	2
M. E. 23—Steam Eng.....	2	C. E. 10—Surveying.....	2
Total .....	16	Total .....	17

<sup>1</sup> Semester hours. For definition see page 257.<sup>2</sup> The numbers refer to courses in the Description of Courses, page 255.<sup>3</sup> Students who have had chemistry in the high school equivalent to Chemistry 1b will register in Chemistry 1a.

**Course Required for the Degree of B.S. in Mechanical Engineering****FIRST YEAR**

FIRST SEMESTER		SECOND SEMESTER	
	S. H. <sup>1</sup>		S. H. <sup>1</sup>
G. E. D. 1 <sup>2</sup> —Gen. Eng. Drawing.....	4	G. E. D. 2—Descr. Geometry.....	4
Math. 4—Trigonometry.....	2	Math. 6—Analyt. Geometry.....	5
Math. 2—Adv. Algebra.....	3	French 1, or German 3 or 5 or 6, or English 2, or Rhetoric 11, or Spanish 1.....	4
French 1, or German 1 or 4, or English 1, or Spanish 1.....	4	M. E. 41—Shop Practice.....	3
M. E. 41—Shop Practice.....	3	Mil. 2—Military Drill.....	1
Mil. 2—Military Drill.....	1	Mil. 1—Drill Regulations.....	1
Phys. Tr. 1—Gymnasium.....	1	Phys. Tr. 1—Gymnasium.....	1
Total .....	18	Total .....	19

**SECOND YEAR**

Math. 7—Diff. Calculus.....	5	Math. 9—Integral Calculus.....	3
Phys. 1—Physics Lectures.....	3	Phys. 1—Physics Lectures.....	2
Phys. 3—Physics Laboratory.....	2	Phys. 3—Physics Laboratory.....	2
Rhet. 1—Rhetoric and Themes.....	3	Rhet. 1—Rhetoric and Themes.....	3
M. E. 42—Machine Shop.....	3	T. & A. M. 7—Analyt. Mech.....	3
M. E. 4—Machine Design.....	2	M. E. 42—Machine Shop.....	2
Mil. 2—Military Drill.....	1	M. E. 16—Steam Eng.....	3
Total .....	19	Mil. 2—Military Drill.....	1
		Total .....	19

**THIRD YEAR**

T. & A. M. 6—Eng. Materials.....	1	M. E. 7—Thermodynamics.....	3
T. & A. M. 8—Analyt. Mech.....	2½	M. E. 9—Mach. Design.....	3
T. & A. M. 9—Res. of Materials.....	3½	M. E. 29—Seminar.....	1
M. E. 3—Power Meas.....	2	T. & A. M. 11—Analyt. Mechanics.....	3
M. E. 5—Mechanism.....	3	E. E. 16—Dynamo Mach.....	4
Math. 9a—Integral Calculus.....	2	Chem. 16—Eng. Chemistry.....	3
Chem. <sup>3</sup> 1a or 1b—Inorg. Chem.....	4	Total .....	17
Total .....	18	Total .....	17

**FOURTH YEAR**

M. E. 6—Heat Engines.....	2	M. E. 6—Heat Engines.....	2
M. E. 8—Mech. of Machinery.....	3	M. E. 14—Des. of Pow. Plants.....	2
M. E. 9—Mach. Design.....	3	M. E. 33—Thesis.....	3
M. E. 12—Mech. Lab.....	3	Arch. 13—Heat & Ventilation.....	3
M. E. 19—Seminar.....	1	R. E. 11—R. Eng. or C. E. 10—Sur.....	2
E. E. 6—Alt. Currents.....	2	Econ. 16—Econ. Problems.....	2
Econ. 2—Prin. of Economics.....	2	Elective .....	2
Total .....	16	Total .....	16

<sup>1</sup> Semester hours. For definition see page 257.<sup>2</sup> The numbers refer to courses in the Description of Courses, page 255.<sup>3</sup> Students who have had chemistry in the high school equivalent to Chemistry 1b will register in Chemistry 1a.

## Course Required for the Degree of B. S. in Mining Engineering

## FIRST YEAR

FIRST SEMESTER		SECOND SEMESTER	
	S. H. <sup>1</sup>		S. H. <sup>1</sup>
G. E. D. 1 <sup>2</sup> —Gen. Eng. Drawing.....	4	G. E. D. 2—Descr. Geometry.....	4
Math. 4—Trigonometry.....	2	Math. 6—Analyt. Geometry.....	5
Math. 2—Adv. Algebra.....	3	French 1, or German 3 or 5 or	
French 1, or German 1 or 4, or		6, or English 2, or Rhetoric 11,	
English 1, or Spanish 1.....	4	or Spanish 1.....	4
M. E. 41—Shop Practice.....	3	M. E. 41—Shop Practice.....	3
Mil. 2—Military Drill.....	1	Mil. 2—Military Drill.....	1
Phys. Tr. 1—Gymnasium.....	1	Mil. 1—Drill Regulations.....	1
		Phys. Tr. 1—Gymnasium.....	1
Total .....	18	Total .....	19

## SECOND YEAR

Math. 8a—Diff. & Int. Calculus.....	5	Phys. 1—Physics Lectures.....	2
Phys. 1—Physics Lectures.....	3	Phys. 3—Physics Laboratory.....	2
Phys. 3—Physics Laboratory.....	2	Rhet. 1—Rhetoric and Themes.....	3
Rhet. 1—Rhetoric and Themes.....	3	T. & A. M. 7—Analyt. Mech.....	3
Min. 1—Mining Prin.....	1	Min. 2—Earth & Rock Excavation.....	3
Chem. <sup>3</sup> 1b or 1a—Inorg. Chem.....	4	Chem. 2 & 3—Inorg. Chem. & Anal. 5	
Mil. 2—Military Drill.....	1	Mil. 2—Military Drill.....	1
Total .....	19	Total .....	19

## THIRD YEAR

T. & A. M. 8—Analyt. Mech.....	2½	Min. 4—Mine Surveying.....	4
T. & A. M. 9—Res. of Materials.....	3½	Min. 5—Mine. Vent.....	3
Min. 3—Mining Methods.....	2	C. E. 20—Graphic Statics.....	2
C. E. 21—Surveying.....	5	M. E. 35—Steam Eng.....	3
Chem. 5a.....	5	Geology 13—Engin. Geology.....	5
Total .....	18	Total .....	17

## FOURTH YEAR

Min. 6—Mech. Eng. of Mines.....	3	Min. 7—Mine Admin. Organization	
Min. 9—Prep. of Coal & Ores.....	3	and Law.....	2
Min. 12—Mine Design.....	3	Min. 8—Mine Plans.....	2
Chem. 7—Metallurgy.....	3	Min. 10—Min. Lab.....	2
Geol. 21—Geol. of Coal, or.....	2	Min. 11—Thesis.....	3
Chem. 69—Assaying (2 hrs.).....	0	Geology 2.....	3
Chem. 65—Tech. Gas & Fuel Anal.....	2	E. E. 16—Dynamo Elec. Mach.....	4
Total .....	16	Total .....	16

<sup>1</sup> Semester hours. For definition see page 257.<sup>2</sup> The numbers refer to courses in the Description of Courses, page 255.<sup>3</sup> Students who have had chemistry in the high school equivalent to Chemistry 1b will register in Chemistry 1a.

### Course Required for the Degree of B. S. in Municipal and Sanitary Engineering

#### FIRST YEAR

FIRST SEMESTER	S. H. <sup>1</sup>	SECOND SEMESTER	S. H. <sup>1</sup>
G. E. D. 1 <sup>2</sup> —Gen Eng. Drawing.....	4	G. E. D. 2—Descr. Geometry.....	4
Math. 4—Trigonometry.....	2	Math. 6—Analyt. Geometry.....	5
Math. 2—Adv. Algebra.....	3	French 1, or German 3 or 5 or	
French 1, or German 1 or 4, or		6, or English 2, or Rhetoric 11,	
English 1, or Spanish 1.....	4	or Spanish 1.....	4
M. E. 41—Shop Practice.....	3	M. E. 41—Shop Practice.....	3
Mil. 2—Military Drill.....	1	Mil. 2—Military Drill.....	1
Phys. Tr. 1—Gymnasium.....	1	Mil. 1—Drill Regulations.....	1
		Phys. Tr. 1—Gymnasium.....	1
Total .....	18	Total .....	19

#### SECOND YEAR

Math. 7—Diff. Calculus.....	5	Math. 9—Integral Calculus.....	3
Phys. 1—Physics Lectures.....	3	Phys. 1—Physics Lectures.....	2
Phys. 3—Physics Laboratory.....	2	Phys. 3—Physics Laboratory.....	2
Rhet. 1—Rhetoric and Themes.....	3	Rhet. 1—Rhetoric and Themes.....	3
C. E. 21—Surveying.....	5	T. & A. M. 7—Analyt. Mech.....	3
Mil. 2—Military Drill.....	1	C. E. 22—Top. Surveying.....	4
		C. E. 23—Railroad Curves.....	1
		Mil. 2—Military Drill.....	1
Total .....	19	Total .....	19

#### THIRD YEAR

T. & A. M. 6—Eng. Materials.....	1	T. & A. M. 10—Hydraulics.....	3
T. & A. M. 8—Analyt. Mech.....	2½	C. E. 1—Road Engineering.....	2
T. & A. M. 9—Res. of Materials.....	3½	C. E. 20—Graphic Statics.....	2
M. & S. E. 5a—Bacteriology.....	2	M. E. 11—Steam Eng. & Boilers.....	3
C. E. 4a—R. R. Surveying.....	3	Chemistry 2, 3 and 10b—Qual. &	
Chem. <sup>3</sup> 1b or 1a—Inorganic		Water Analysis.....	5
Chemistry .....	4	E. E. 1—Elec. Eng.....	2
Total .....	16	Total .....	17

#### FOURTH YEAR

M. & S. E. 2—Water Supply Eng....	4	M. & S. E. 3—Sewerage.....	3
M. & S. E. 6a—Water Pur.,		M. & S. E. 6b—Water Pur.,	
Sewage Disp. & Gen. Sanitation....	3	Sewage Disp. & Gen. Sanitation....	2
C. E. 5—Masonry Constr.....	5	M. & S. E. 9—Hydraul. Des. & Con.	2
C. E. 12—Bridge Analysis.....	2	M. & S. E. 30—Thesis.....	2
C. E. 13a—Bridge Details.....	2	C. E. 6—Mas. & Reinf. Con. Design	2
E. E. 28—Elec. Eng.....	1	C. E. 16—Eng. Con. & Spec.....	2
		M. E. 13—Mech. Eng. Lab.....	2
		Econ. 2—Prin. of Economics.....	2
Total .....	17	Total .....	17

<sup>1</sup> Semester hours. For definition see page 257.

<sup>2</sup> The numbers refer to courses in the Description of Courses, page 255.

<sup>3</sup> Students who have had chemistry in the high school equivalent to Chemistry 1b will register in Chemistry 1a.



### Course Required for the Degree of B. S. in Railway Civil Engineering<sup>1</sup>

#### FIRST YEAR

FIRST SEMESTER		SECOND SEMESTER	
	S. H. <sup>2</sup>		S. H. <sup>3</sup>
G. E. D. 1 <sup>3</sup> —Gen. Eng. Drawing	4	G. E. D. 2—Descr. Geometry	4
Math. 4—Trigonometry	2	Math. 6—Analyt. Geometry	5
Math. 2—Adv. Algebra	3	French 1, or German 3 or 5 or 6	
French 1, or German 1 or 3 or 4,		or English 2, or Rhetoric 11 or	
or English 1, or Spanish 1	4	Spanish 1	4
M. E. 41—Shop Practice	3	M. E. 41—Shop Practice	3
Mil. 2—Military Drill	1	Mil. 2—Military Drill	1
Phys. Tr. 1—Gymnasium	1	Mil. 1—Drill Regulations	1
		Phys. Tr. 1—Gymnasium	1
Total	18	Total	19

#### SECOND YEAR

Math. 7—Diff. Calculus	5	Math 9—Integral Calculus	3
Phys. 1—Physics Lectures	3	Phys. 1—Physics Lecture	2
Phys. 3—Physics Laboratory	2	Phys. 3—Physics Laboratory	2
Rhet. 1—Rhetoric and Themes	3	Rhet. 1—Rhetoric and Themes	3
C. E. 21—Surveying	5	T. & A. M. 7—Analyt. Mech.	3
Mil. 2—Military Drill	1	C. E. 22—Top. Surveying	4
		C. E. 23—R. R. Curves	1
		Mil. 2—Military Drill	1
Total	19	Total	19

#### THIRD YEAR

T. & A. M. 6—Eng. Materials	1	T. & A. M. 10—Hydraulics	3
T. & A. M. 8—Analyt. Mech.	2½	R. E. 31—Ry. Yards & Terminals	3
T. & A. M. 9—Res. of Materials	3½	C. E. 20—Graphic Statics	2
C. E. 4—R. R. Surveying	5	M. E. 11—Steam Eng. & Boilers	3
Chemistry <sup>4</sup> 1b or 1a—Inorganic		Astron. 3 & 6, or Geol. 13	5
Chemistry	4	Econ. 2—Prin. of Economics	2
Total	16	Total	18

#### FOURTH YEAR

R. E. 33—Econ. Theory of Ry. Loc.	4	R. E. 30—Thesis	3
R. E. 35—Signal Eng.	1	R. E. 32—Ry. Structures	2
Econ. 41—Ry. Hist. & Organization	3	R. E. 50—Seminar	1
C. E. 5—Masonry Con.	5	Econ. 42—Ry. Admin.	3
C. E. 12—Bridge Analysis	2	C. E. 6—Mas. & Reinf. Con. Des.	2
C. E. 18—Tunneling	1	C. E. 14a—Bridge Design	2
C. E. 24—Metal Structures	1	C. E. 16—Eng. Con. & Spec.	2
R. E. 50—Seminar	1		
Total	18	Total	15

<sup>1</sup> Differs from the course in civil engineering only after the first semester of the third year.

<sup>2</sup> Semester hours. For definition see page 257.

<sup>3</sup> The numbers refer to the courses in the Description of Courses, page 255.

<sup>4</sup> Students who have had chemistry in the high school equivalent to Chemistry 1b will register in Chemistry 1a.

**Course Required for the Degree of B. S. in Railway Electrical Engineering<sup>1</sup>****FIRST YEAR**

FIRST SEMESTER		SECOND SEMESTER	
	S. H. <sup>2</sup>		S. H. <sup>2</sup>
G. E. D. 1 <sup>3</sup> —Gen. Eng. Drawing....	4	G. E. D. 2—Descr. Geometry.....	4
Math. 4—Trigonometry .....	2	Math. 6—Analyt. Geometry.....	5
Math. 2—Adv. Algebra.....	3	French 1, or German 3 or 5 or 6, or English 2, or Rhetoric 11, or Spanish 1.....	4
French 1, or German 1 or 4, or English 1, or Spanish 1.....	4	M. E. 41—Shop Practice.....	3
M. E. 41—Shop Practice.....	3	Mil. 2—Military Drill.....	1
Mil. 2—Military Drill.....	1	Mil. 1—Drill Regulations.....	1
Phys. Tr. 1—Gymnasium.....	1	Phys. Tr. 1—Gymnasium.....	1
<b>Total .....</b>	<b>18</b>	<b>Total .....</b>	<b>19</b>

**SECOND YEAR**

Math. 7—Diff. Calculus.....	5	Math 9—Integral Calculus.....	3
Phys. 1—Physics Lectures.....	3	Phys. 1—Physics Lectures.....	2
Phys. 3—Physics Laboratory.....	2	Phys. 3—Physics Laboratory.....	2
Rhet. 1—Rhetoric and Themes.....	3	Rhet. 1—Rhetoric and Themes.....	3
M. E. 42—Shop Practice.....	2	T. & A. M. 7—Analyt. Mech.....	3
M. E. 24—Mach. Design & Mech.....	3	Chem. 1—Inorganic Chemistry.....	4
Mil. 2—Military Drill.....	1	Mil. 2—Military Drill.....	1
<b>Total .....</b>	<b>19</b>	<b>Total .....</b>	<b>18</b>

**THIRD YEAR**

T. & A. M. 6—Eng. Materials.....	1	T. & A. M. 10—Hydraulics.....	3
T. & A. M. 8—Analyt. Mech.....	2½	E. E. 5—Alt. Currents.....	4
T. & A. M. 9—Res. of Materials.....	3½	E. E. 23—Elec. Eng. Lab.....	2
E. E. 3—Dynamo-Elec. Mach.....	3	Phys. 4—Elec. & Mag. Meas.....	2
E. E. 22—Elec. Eng. Lab.....	2	C. E. 10—Surveying.....	2
Phys. 4—Elec. & Mag. Meas.....	2	M. E. 13—Mech. Eng. Lab.....	3
Chem. 2 & 3—Inorg. Chem. & Anal.	4	Math. 9a—Integral Calculus.....	2
<b>Total .....</b>	<b>18</b>	<b>Total .....</b>	<b>18</b>

**FOURTH YEAR**

R. E. 10—Seminar .....	1	R. E. 10—Seminar.....	1
R. E. 64—Elec. Ry. Practice.....	3	R. E. 63—Ry. Lab. & Road Tests....	3
E. E. 14—Adv. Alt. Currents.....	4	R. E. 65—Elec. Ry. Practice.....	3
E. E. 24—Elec. Eng. Lab.....	2	E. E. 34—Elec. Design & Power Plants.....	3
M. E. 15—Thermodynamics.....	3	Econ. 16—Econ. Problems.....	2
Econ. 2—Prin. of Economics.....	2	R. E. 30—Thesis .....	3
M. E. 23—Steam Eng.....	2	<b>Total .....</b>	<b>15</b>
<b>Total .....</b>	<b>17</b>		

<sup>1</sup> Differs from the course in electrical engineering in the fourth year only.<sup>2</sup> Semester hours. For definition see page 257.<sup>3</sup> The numbers refer to the courses in the Description of Courses, page 255.

# Course in Railway Mechanical Engineering 181

## Course Required for the Degree of B. S. in Railway Mechanical Engineering<sup>1</sup>

### FIRST YEAR

FIRST SEMESTER	S. H. <sup>2</sup>	SECOND SEMESTER	S. H. <sup>2</sup>
G. E. D. 1 <sup>3</sup> —Gen. Eng. Drawing.....	4	G. E. D. 2—Descr. Geometry.....	4
Math. 4—Trigonometry .....	2	Math. 6—Analyt. Geometry.....	5
Math. 2—Adv. Algebra.....	3	French 1, or German 3 or 5 or 6, or English 2, or Rhetoric 11, or Spanish 1 .....	4
French 1, or German 1 or 4, or English 1, or Spanish 1.....	4	M. E. 41—Shop Practice.....	3
M. E. 41—Shop Practice.....	3	Mil. 2—Military Drill.....	1
Mil. 2—Military Drill.....	1	Mil. 1—Drill Regulations.....	1
Phys. Tr. 1—Gymnasium .....	1	Phys. Tr. 1—Gymnasium.....	1
Total .....	18	Total .....	19

### SECOND YEAR

Math. 7—Diff. Calculus .....	5	Math. 9—Integral Calculus.....	3
Phys. 1—Physics Lectures.....	3	Phys. 1—Physics Lectures.....	2
Phys. 3—Physics Laboratory.....	2	Phys. 3—Physics Laboratory.....	2
Rhet. 1—Rhetoric and Themes.....	3	Rhet. 1—Rhetoric and Themes.....	3
M. E. 4—Mach. Design.....	2	T. & A. M. 7—Analyt. Mech.....	3
M. E. 42—Mach. Shop.....	3	M. E. 16—Steam Eng.....	3
Mil. 2—Military Drill .....	1	M. E. 42—Mach. Shop.....	2
		Mil. 2—Military Drill.....	1
Total .....	19	Total .....	19

### THIRD YEAR

T. & A. M. 6—Eng. Materials.....	1	M. E. 9—Mach. Design.....	3
T. & A. M. 8—Analyt. Mech.....	2½	M. E. 15—Thermodynamics.....	3
T. & A. M. 9—Res. of Materials.....	3½	M. E. 29—Seminar.....	1
M. E. 3—Power Meas.....	2	T. & A. M. 11—Analyt. Mechanics	3
M. E. 5—Mechanism.....	3	E. E. 16—Dynamo Mach.....	4
Math. 9a—Int. Calculus.....	2	Chem. 16—Eng. Chem.....	3
Chem. <sup>4</sup> 1b or 1a—Inorg. Chem.....	4		
Total .....	18	Total .....	17

### FOURTH YEAR

R. E. 1—Locomotives .....	2	R. E. 3—Shops & Aux. Equip.....	2
R. E. 2—Locomotive Design.....	3	R. E. 7—Adv. Design.....	3
R. E. 4—Locomotive Performance..	2	R. E. 10—Seminar.....	1
R. E. 8—Dynamometer Car Tests..	2	R. E. 30—Thesis.....	3
R. E. 10—Seminar .....	1	R. E. 61—Traction.....	3
M. E. 8—Mech. of Mach.....	3	C. E. 10—Surveying.....	2
E. E. 6—Alt. Currents.....	2	Econ. 16—Econ. Prob.....	2
Econ. 2—Prin. of Economics.....	2		
Total .....	17	Total .....	16

<sup>1</sup> Differs from the course in mechanical engineering only after the first semester of the third year.

<sup>2</sup> Semester hours. For definition see page 257.

<sup>3</sup> The numbers refer to the courses in the Description of Courses, page 255.

<sup>4</sup> Students who have had chemistry in the high school equivalent to Chemistry 1b will register in Chemistry 1a.

# THE COLLEGE OF AGRICULTURE

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For the *buildings* used by this College, see page 57; for a list of its *courses*, page 73; for *clubs auxiliary to its courses of study*, page 114; for *honors*, page 106; for *honorary societies*, page 113; for *fees* and *expenses*, page 122.

## PURPOSES

This College offers courses of instruction to both men and women. The courses offered to men are designed for three distinct purposes:

First, and mainly, to train for the profession of farming.

Second, to train for the teaching of agriculture in the public schools.

Third, to train for the profession of landscape gardening.

The courses for women, offered by the department of household science, have two purposes in view:

First, and mainly, to train young women in the science and art of household affairs.

Second, to prepare teachers for giving instruction in domestic science in high schools, and, in connection with the College of Science, to fit for college and university positions.

In the case of both men and women the great purpose is to prepare for the practical affairs of life. Technical knowledge and skill should be developed along with, and not at the expense of, those things which tend to the production of cultured and versatile men and women. Accordingly the technical work is closely associated with the related sciences, and students are required to divide their time fairly with those subjects that develop general knowledge and breadth of view.

The College offers over ninety courses of instruction in technical subjects, besides opportunity to elect from the scientific and literary offerings of the other colleges of the University.

The elective system prevails, and with a few exceptions the student is left free to select those subjects which seem best fitted

to meet his needs, always under the advice and guidance of the faculty.

Credit is given for all work accomplished; this credit counts toward graduation if the student desires a degree.

### ADMISSION

For the regulations in regard to admission to the College of Agriculture, see the general statement of the entrance requirements of the University, page 75.

### SCHOLARSHIPS IN AGRICULTURE AND HOUSEHOLD SCIENCE

For detailed information concerning scholarships in agriculture and household science, see page 118.

### FACILITIES FOR INSTRUCTION AND METHODS OF WORK

The close affiliation of the College with the work of the Agricultural Experiment Station not only enables the University to support a larger faculty than would otherwise be possible, but also permits a much higher degree of specialization. For the most part those who teach in the College are the ones who conduct experiments in the same subjects in the Station.

The methods of instruction vary with the nature of the courses. In general the laboratory method prevails. Text-books are used whenever good ones are available. Both the laboratory and the text are supplemented by lectures and reference readings. Buildings and laboratory space, illustrative specimens and material, and library facilities are provided.

### AGRICULTURAL EXTENSION

Agricultural extension work serves as the intermediary between the College of Agriculture and the Agricultural Experiment Station on the one hand and the local community and the farm on the other. Each department does extension work, and so far as possible provides special men for such work. The responsibility for the work of these men lies with their own department. For this reason not all of the extension effort issues from one office.

For administrative purposes and to coordinate these activities through a regular channel, agricultural extension is administered as

a separate department, conducting all extension enterprises which do not deal with technical subjects and cooperating with other departments in diffusing the result of their work in the State.

Some of the general extension enterprises are: agricultural extension schools and demonstrations in different localities; the Two Weeks' Course given annually at the College in January; helping at farmers' institutes and similar gatherings, with special railway lecture trains, at the boys' state fair school, and in educational exhibits at fairs and elsewhere; welfare work in rural communities; and excursions to the College and taking care of visitors.

Aside from this, courses of study are offered to assist in determining what phases of agriculture are suitable for secondary school purposes and how they should be taught, and for the discussion of agricultural organization, extension projects, and methods.

### AGRONOMY

The department of agronomy gives instruction in those subjects which relate especially to the field and its affairs, as drainage, farm machinery, field crops; the chemistry, physics, and bacteriology of the soil; manures and rotation in their relation to fertility; plant breeding. The department possesses equipment and facilities for instruction in these subjects, and added to this are opportunities for contact with the research work of the Agricultural Experiment Station, especially in crop production, soil fertility, and plant breeding, both in the analytical and pot culture laboratories and on the experiment fields at the University and in other parts of the State.

Attention is called here to the fact that in case circumstances prohibit a regular four-year course, it is possible for a student who has had sufficient preparatory training so to arrange his studies as to obtain the necessary prerequisites and complete the general courses in soil physics and soil fertility in two years' time. (See Agronomy 9 and 12.)

### ANIMAL HUSBANDRY

This department gives courses covering the separate study of sheep, swine, and beef cattle and their products; heavy and light horses with their care and training; the management of herds, flocks, and studs; the principles and practice of feeding and of breeding; and the chemical and physiological phases of animal nutrition.

For the study of animals about 500 pure-bred cattle, sheep, swine, and horses are constantly available in the herds, flock, and stud of the University, which are also used for investigations in feeding and breeding and for the illustration of the type or types of each breed. These consist of Percheron, Standard-bred, Shire, and American Saddle horses; Shorthorn, Hereford, and Aberdeen-Angus cattle; Shropshire, Oxford, Southdown, Hampshire, Rambouillet, Dorset, and Cheviot sheep; Poland-China, Berkshire, Duroc Jersey, Chester White, Tamworth, and Yorkshire swine. In addition, animals are secured from time to time to illustrate the market classes and grades of live stock, and special attention is given to instruction in the selection of animals with reference to feed lot and market requirements. For the class work in stock judging a room with tan-bark floor is provided in the Agricultural Building, where specimen animals may be brought before the classes. About 1000 lantern slides and a collection of photographs, charts, diagrams, and models afford further material for the study of stock judging. The study of pedigrees and development of the various breeds is facilitated by 75 sets of different herd, stud, and flock registers and complete files of the leading American and British live stock journals.

The equipment for instruction and investigation in the feeding, breeding, and management of live stock consists of modern buildings for the housing of beef cattle, swine, sheep, and horses, with the appliances necessary for individual and collective feeding tests; brick-paved feed lots and open sheds, in which steers may be fed in carload lots; a feed storage barn 44x72 feet, with various forms of grinding mills and other machinery for the preparation of feed; and various kinds of harness, vehicles, and other appliances for the training of horses. The department also maintains a cold storage room and other equipment for conducting demonstrations in the cutting and handling of meats; a collection of wool samples, a fibre testing machine, and microscopes for the study of wool. The chemical and physiological laboratories of the department afford facilities for advanced work in animal nutrition.

### DAIRY HUSBANDRY

The department of dairy husbandry offers courses under the four general divisions of economic milk production, city milk supply, dairy bacteriology, and dairy manufactures.

For instructional and experimental purposes two herds of dairy cows are maintained, one a grade herd used primarily as an experimental herd, the other a pure bred herd composed of Holstein Friesians, Guernseys, Jerseys, and Ayrshires.

For instruction in dairy cattle and economic milk production, free use is made of both herds.

The actual business of economic milk production is illustrated by a twenty-acre dairy farm conducted by the department for the purpose of producing the most milk possible per acre, at the least expense. The feeding and breeding experiments, while conducted primarily for the use of the Experiment Station, are of value to the student.

Practical instruction in city milk supply is given in a dairy building used exclusively for cooling and bottling from the pure bred herd. Sanitary methods of delivery are still further illustrated in the daily distribution of this milk on the University milk route.

A bacteriological laboratory affords facilities for instruction in the courses in dairy bacteriology and city milk supply, and for bacteriological studies necessary when outbreaks of communicable disease appear to be due to the local milk supply. The laboratory is used also in the investigation of specific dairy problems.

Facilities for instruction in the manufacture of butter and cheese are provided in the University creamery, where 400 pounds of fat, in the form of whole milk and cream, are daily made into butter and marketed on a commercial basis. The creamery is equipped with the most improved cream separators, pasteurizers, cream ripeners, churns, and refrigerating machine. The student has free access to these rooms for laboratory purposes. In addition to this, the creamery and apparatus are used in investigation of problems involved in the manufacture of butter.

## HORTICULTURE

The department of horticulture offers instruction in thirty-five courses, covering the five divisions of horticulture (pomology, olericulture, floriculture, landscape gardening, and forestry), and also in subjects dealing with principles and practices applicable to all the divisions, such as plant propagation, spraying, evolution of horticultural plants, and experimental horticulture.

For the instruction in pomology, use is made of the various fruit plantations maintained by the department, including four apple



orchards of ages from two to twenty years; a plum orchard representing the leading varieties of European, Japanese, and native plums; plantations of pears, peaches, and cherries; a vineyard of some fifty varieties of grapes trained on the Kniffin system; and lesser areas devoted to the small fruits. This assortment of fruit trees and plants, with an equipment in pruning tools, affords facilities for practice in pruning. The products of the orchards are drawn upon for practice in the grading and packing of fruits and the study of systematic pomology. A collection of fruit packages is maintained, with a series of models showing the construction of fruit storage houses. There is also a collection of wax models of fruits representing the principal varieties grown in Illinois.

For the use of students in olericulture, or vegetable gardening, certain areas of ground are reserved, on which the various garden operations are illustrated, and various crops are grown. In addition to the land, the equipment for instruction in vegetable gardening consists of hotbed frames and sash, seed drills and wheel hoes of various types, an assortment of hand tools, markers, planters, and other special tools, tying material and packing boxes for onions, asparagus, lettuce, and other products, with other accessories and appliances for the growing and handling of vegetables.

A new house 105x28 feet affords additional facilities for both experimental and instructional work in vegetable gardening. A house 80x28 feet and another 60x30 also add to the equipment for work in plant breeding.

The facilities for instruction in floriculture consist of four houses each 105x28 feet connected by a corridor house 10x80 feet. While intended primarily for experimental purposes, these houses serve as illustrations in modern greenhouse construction and furnish material for the work in commercial floriculture. A growing house 332x34 feet and a palm house 40x80 feet, to be devoted entirely to instructional work, will add to the facilities of the department. A service building containing class rooms and offices is equipped with florists' supplies used in the work. The greenhouses contain a collection of plants, including geraniums, begonias, carnations, chrysanthemums, and bulbs in assortment, and furnish facilities for work in amateur floriculture and certain branches of plant propagation.

The collection of ornamental shrubs and trees growing upon the campus furnishes material for plant studies in connection with the work in landscape gardening, while the plantings about the

horticultural building and certain residences in the vicinity of the University illustrate types of landscape design. A series of 500 lantern slides is used in the lectures in landscape gardening.

Instruction in forestry is facilitated by a collection of native woods and a forest tree plantation of some thirty acres, consisting of Scotch pine, white pine, Norway spruce, European larch, green ash, black walnut, hickory, bur oak, white elm, and other species.

In addition to the material already mentioned as available for use in the course in plant propagation, the small fruit and grape plantations are drawn upon for material for making the various types of hardwood cuttings and for illustrating propagation by layers, suckers, etc. Scions are cut from the orchards, and seeding stocks are purchased in quantity each year for work in grafting. A herbarium of cultivated plants furnishes material for the study of the relationships and classification of economic and ornamental plants.

## HOUSEHOLD SCIENCE

The courses of instruction given in this department are planned to meet the needs of two classes of students, viz.: (a) those students who specialize in other lines of work, but desire a knowledge of the general principles and facts of household science; (b) those students who wish to make a specialty of household science.

The department of household science is housed in the north wing of the Woman's Building. The kitchen for extension work with dining room adjoining and a well equipped laundry are in the basement. The first floor contains two class rooms, a seminar room, a large exhibition room for illustrative material for work in house construction and textile fabrics, offices, and cloak rooms. On the second floor are individual, diet, institutional, and class kitchens, small and large dining rooms, chemical laboratory, two large sewing rooms, offices, and store rooms. On this floor provision is made for the study of the preparation and service of food in large quantities in the institutional kitchen and large dining room adjoining. The equipment on this floor provides practice for those interested in the problems of institutional management and for dietitians. The third floor contains additional sewing rooms, offices, equipment for teaching home care of the sick, and an apartment in which the problems of house construction, furnishing, and household administration are studied.

## VETERINARY SCIENCE

In the department of veterinary science the student is instructed in subjects relating to the prevention of disease among domestic animals and their treatment when affected by disease.

## REQUIREMENTS FOR GRADUATION

Students who have satisfied all matriculation requirements and have maintained throughout their course a satisfactory record of scholarship and moral character will be graduated with the degree of Bachelor of Science, upon having completed the studies of the prescribed list and sufficient electives to make a total of 130 semester hours.

A thesis is not required for graduation, but any student who has completed not less than 90 hours of credit before the senior year may then elect a thesis course in any department (subject to the approval of the head thereof) in which he has done at least 20 hours' work.

Graduates of approved colleges may expect to secure a degree in agriculture from the University of Illinois upon completion of the technical and scientific requirements. This will ordinarily require approximately two years of residence work; a minimum of one year will be exacted.

## GENERAL COURSE IN AGRICULTURE

All students except those in the formal courses in household science, floriculture, or landscape gardening are required to take the same work during the freshman year and part of the sophomore year. This gives the student a correct conception of the fundamental farm practices and an insight into the technical branches of agriculture, such as animal and dairy husbandry, horticulture, farm crops, soils, farm mechanics, buildings, etc., and leaves the junior and senior years open for election.

One hundred thirty hours are required for graduation, as follows:

Agriculture prescribed first two years..19 hours

Agriculture prescribed as electives.....40 hours

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Total agriculture required..... 59 hours

Non-agriculture prescribed.....42 hours

Non-agriculture prescribed as electives.15 hours

Total non-agriculture required....	57 hours
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Open electives.....	14 hours
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 130 hours

## PRESCRIBED SUBJECTS

*Required for the Degree of Bachelor of Science in General Course  
in Agriculture*

## FIRST YEAR

<i>First Semester</i>	Hours	<i>Second Semester</i>	Hours
Chemistry 1.....	5	Chemistry 2 and 3.....	5
Rhetoric 1* .....	3	Rhetoric 1.....	3
Agronomy 25.....	4	Animal Husbandry 5.....	3
Horticulture 1a.....	2	Dairy Husbandry 3.....	1
Agricultural Extension 4....	½	Horticulture 1b.....	2
Military 2.....	1	Agricultural Extension 4... ½	
Physical Training.....	1	Military 1 and 2.....	2
		Physical Training.....	1

## SECOND YEAR

Chemistry 13a or Botany 1..	5	Botany 1 or Chemistry 13a.	5
Animal Husbandry 6.....	3	Agronomy 26.....	3
Military 2.....	1	Military 2.....	1
Electives .....		Electives .....	

In addition to the above, students will take the following:

Agriculture, electives..... 40 hours

Non-agriculture, electives..... 15 hours

English 20..... 4 hours

Science, elective..... 5 hours

Open electives..... 14 hours

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\*Those students who show by examination a proficiency in composition sufficient to qualify them for the second semester's work in Rhetoric 1 may be excused from the first semester's work. See page 81.

Students registered previous to September, 1912, will meet the requirements outlined below so far as it is possible to do so:

#### PREScribed SUBJECTS

##### *Required for the Degree of Bachelor of Science in General Course in Agriculture*

Agronomy 6 or 7, 9, 12.....	12½ hours
Animal Husbandry 7.....	3 hours
Botany 12 <sup>1</sup> .....	1 hour
Chemistry 1, 2, 3, 13a.....	15 hours
Dairy Husbandry 1.....	3 hours
Economics 2.....	2 hours
English Literature 1.....	4 hours
Entomology 4.....	2½ hours
Horticulture 1, 10a.....	8 hours
Military 1, 2.....	5 hours
Physical Training 1, 1a.....	2 hours
Rhetoric 1.....	6 hours
Thremmatology 1 (Animal Husbandry 30).....	5 hours

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Total prescribed subjects..... 69 hours

Elective List A; a minimum of.....	4½ hours
Elective List B; a minimum of.....	3 hours
Elective List C; a minimum of.....	25 hours
Elective List D; a minimum of.....	10 hours

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Total ..... 42½ hours

#### LANGUAGE REQUIREMENT

In addition to the above, students who have not offered for matriculation three units of foreign language (commonly three years of high school work) of which two units are in the same language, will be required to offer one of the following at their option:

1. Two years of entrance and eight hours of university credit in foreign language. Except by special permission these credits should not be divided among more than two languages.
2. Sixteen university credits in the same foreign language; or
3. Eight hours of university credit in English literature in

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<sup>1</sup> Botany 12 is not required of students who elect Botany 5 and no credit will be allowed to such students in this course.

addition to the standard requirement, together with eight hours of economics, or eight hours of history, or eight hours of education.

#### ELECTIVE LISTS

List A—Animal Husbandry 1 to 4, 11 to 14, 17 to 18, 22

Dairy Husbandry 2

List B—English literature 2, 16, 23

Rhetoric 16, 20, 19, 3

List C—This list includes all subjects offered in technical agriculture and not included in the prescribed list, viz.:

Agricultural Extension 1, 3

Agronomy 1 to 8, 10, 13, 16 to 22

Animal Husbandry 1 to 4, 8 to 14, 16, 18, 21 to 23b

Dairy Husbandry 2, 7, 8, 11 to 22

Horticulture 2 to 9, 10b to 15b, 17 to 34

Veterinary Science 2, 4, 5, 6

List D—Botany 1, Botany 5, Zoology 1

#### Summary

Total prescribed subjects.....	69 hours
Total list electives.....	45 or 53 hours
Total language requirement.....	16 or 8 hours
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Total .....	130 hours

#### GENERAL COURSE IN FLORICULTURE

The object of this course is to fit men and women for the profession of floriculture. The laboratory exercises in the technical subjects consist of practical work in the greenhouses and garden and give the student a working knowledge of the best methods now in use.

#### PRESCRIBED SUBJECTS

*Required for the Degree of Bachelor of Science in General Course in Floriculture*

Agronomy 9, 12.....	10 hours
Animal Husbandry 30.....	5 hours
Botany 1, 2, 7.....	15 hours
Chemistry 1, 2, 3, 13a.....	15 hours
Economics 2.....	2 hours
English Literature 20.....	4 hours

Entomology 4.....	3 hours
Horticulture 4, 5, 7, 10a, 10b, 12, 15a, 15b, 30, 31, 32.....	41 hours
Military 1, 2.....	5 hours
Physical Training 1, 1a.....	2 hours
Rhetoric 1.....	6 hours
Zoology 1.....	5 hours
Language (see page 191).....	8 or 16 hours
Electives .....	17 hours
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Total prescribed.....	97 or 102 hours
Free electives .....	36 or 28 hours
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Total .....	130 hours

## COURSE OF INSTRUCTION

## First Year

1. Entomology 4; Chemistry 1; Rhetoric 1; Horticulture 4; Military 2; Physical Training 1, 1a.
2. Chemistry 2; Chemistry 3; Rhetoric 1; Horticulture 5; Military 1, 2; Physical Training 1, 1a.

## Second Year

1. English 20; Chemistry 13a; Botany 2; Military 2.
2. Zoology 1; Horticulture 15a; Botany 1; Military 2.

## Third Year

1. Botany 7; Agronomy 9; Horticulture 15b; Economics 2.
2. Agronomy 12; Horticulture 7; Electives, 8 hours.

## Fourth Year

1. Horticulture 10a; Horticulture 12a; Horticulture 31; Electives, 6 hours.
2. Horticulture 30; Horticulture 32; Animal Husbandry 30; Horticulture 10b.

## GENERAL COURSE IN HOUSEHOLD SCIENCE

Of the 130 hours required for graduation, 99 are provided for in the prescribed list and the restricted electives of List A. The other 31 hours of credit necessary for graduation may be taken, subject to the approval of the Dean of the College, from any courses offered in the University. Holders of scholarships in

household science in this College take the course as laid out here. Variations from it can be made only by special permission of the Council of Administration on recommendation of the faculty of the College.

#### PREScribed SUBJECTS

#### *Required for the Degree of Bachelor of Science in General Course in Household Science*

Art and Design 1, 12, 19.....	9 hours
Botany 1, 5.....	10 hours
Chemistry 1, 2, 3.....	10 hours
English 1, 2.....	8 hours
Household Science 1, 2, 3, 6, 7, 10, 12, 14.....	20 hours
History 1, or 3.....	6 or 8 hours
Physiology 4.....	5 hours
Physical Training 7, Physiology 6.....	3 hours
Rhetoric 1.....	6 hours
Zoology .....	5 hours
Language (see page 191) .....	8 or 16 hours
English or Rhetoric .....	5 hours
*List A, a minimum of.....	4 hours

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Total required subjects .....	99 to 109 hours
Electives .....	31 to 21 hours

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Total .....	130 hours
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#### ELECTIVES

List A.—English 19, 24  
 Horticulture 1, 2, 3, 5, 19, 28  
 Household Science 5, 13  
 Economics 2, Sociology 1  
 Physics 2a  
 Education 1, 2, 6, 9  
 Agronomy 5, 6  
 Animal Husbandry 10  
 Dairy Husbandry 1, 14, 19

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\*If Physics has not been offered for entrance, its equivalent should be elected.



*Course of Instruction*

First Year

1. Household Science 2; Chemistry 1; Rhetoric 1; Physical Training 7 and 9; English 1.
2. Household Science 1; Chemistry 2, 3; Rhetoric 1; Physical Training 7; English 2.

Second Year

1. Household Science 6; Zoology 1; Household Science 7; Art and Design 1; Horticulture 19; Electives.
2. Household Science 14; Botany 1; Art and Design 12; Horticulture 19; Electives.

Third Year

1. Art and Design 19; Physiology 4; Advanced English; Electives.
2. Household Science 3; Household Science 12; Advanced English; Economics 2; Art and Design 19; Electives.

Fourth Year

1. Household Science 10; Sociology 1; Education 1; History 3.
2. Education 2 or 6; Botany 5; History 3.

GENERAL COURSE IN LANDSCAPE GARDENING

The work is two-fold: (1) Elementary work for one year open to all who are working for a baccalaureate degree in agriculture; (2) a four years' course in preparation for professional landscape gardening.

PREScribed SUBJECTS

*Required for the Degree of Bachelor of Science in Landscape Gardening*

Architecture 13, 14, 15, 16, 31, 32, 33, 34, 35, 36.....	32 hours
Art and Design 4.....	6 hours
Botany 1.....	5 hours
Civil Engineering 1, 21, 22.....	11 hours
Descriptive Geometry (G. E. D. 2).....	4 hours
Economics 2.....	2 hours
Entomology 4.....	3 hours
Language (See page 191).....	8 or 16 hours
Horticulture 5, 10a, 10b, 23a, 23b, 24a, 24b, 25a, 25b, 27, 28, 31, 36.....	37 hours

Mathematics 4.....	2 hours
Military 1, 2.....	5 hours
Physical Training 1, 1a.....	2 hours
Rhetoric 1.....	6 hours

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Total prescribed ..... 123 to 131 hours

#### COURSE OF INSTRUCTION

##### First Year

1. Architecture 13; Architecture 31; Military 2; Physical Training 1; Rhetoric 1; Horticulture 10a; General Engineering Drawing 2.

2. Architecture 14; Architecture 32; Military 1 and 2; Physical Training 1; Rhetoric 1; Horticulture 10b; Mathematics 4.

##### Second Year

1. Architecture 15; Architecture 33; Horticulture 24a; Botany 1; Civil Engineering 21; Military 2.

2. Architecture 16; Architecture 34; Horticulture 24b; Horticulture 5; Civil Engineering 22; Military 2.

##### Third Year

1. Architecture 35; Horticulture 23a; Art and Design 4; Language; Economics 2.

2. Architecture 36. Horticulture 23b; Art and Design 4; Language; Civil Engineering 1.

##### Fourth Year

1. Horticulture 25a; Horticulture 31; Horticulture 27; Electives.

2. Horticulture 25b; Horticulture 28; Entomology 4; Electives.

#### REQUIREMENTS FOR GRADUATION

Students are graduated with the degree of Bachelor of Science in General Course in Landscape Gardening upon completing the following work:

1. The studies of the prescribed list.

2. Sufficient electives, which may be any university courses approved by the instructor in charge, to make a total of 130 hours.

#### GENERAL COURSE FOR PROSPECTIVE TEACHERS OF AGRICULTURE

A general course is offered for prospective teachers of agriculture. Among the subjects recommended are the following:

Agronomy 2, 9, 12, 25, 26; Animal Husbandry 1a, 2a, 4a, 5, 6, 11a, 11b, 30\*; Dairy Husbandry 2, 3; Horticulture 1a, 1b, 3, 5, 10a, 19; Agricultural Extension 1, 4; Botany 1, 12; Chemistry 1, 2, 3, 13a; Entomology 4; Zoology 1; English 20; Rhetoric 1, 5, 7; Economics 2; Education 1, 6; Library Science 12; Military 1, 2; Physical Training 1, 1a; foreign language.

For further information concerning this course, address the Dean of the College of Agriculture.

## TWO WEEKS' COURSE IN AGRICULTURE AND HOUSEHOLD SCIENCE

### AGRICULTURE

The Corn Growers' and Stockmen's Convention is held annually at the College of Agriculture (in 1913, January 13-25). At the time of this meeting, the College gives instruction for two weeks in subjects of special interest to young men on the farm, such as corn and stock judging, milk and seed testing, soils, etc. A morning session of two hours each day is devoted to the discussion of questions of importance to the farmer. In the afternoon an hour is given to lectures upon topics of general interest. The rest of the day is filled with class work in the subjects mentioned above. Each year about a thousand men who are unable to spend a longer time away from home avail themselves of this opportunity to come in touch with the work of the College.

### HOUSEHOLD SCIENCE

At the same time, a two-weeks' course in household science consisting of lectures and recitation work is given in the rooms of the department of household science in the Woman's Building.

### ADMISSION

No entrance examinations are required and any farmer or farmer's son or daughter may enter these courses. It is important that everyone should be here at the opening of the session. Upon arrival at Champaign or Urbana, application should be made at the University Young Men's Christian Association, where information concerning board and room may be obtained.

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\*Students taking the Teachers' course may take Animal Husbandry 30 for one-half semester and receive 2½ credits therefor.

# THE GRADUATE SCHOOL

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## THE EXECUTIVE FACULTY

EDMUND JANES JAMES, Ph.D., LL.D., *President of the University*

DAVID KINLEY, Ph.D., LL.D., *Dean of the Graduate School, Director of the Courses in Commerce, and Professor of Economics*

BOYD HENRY BODE, Ph.D., *Professor of Philosophy*

ALBERT PRUDEN CARMAN, A.M., Sc.D., *Professor of Physics*

GUY STANTON FORD, Ph.D., *Professor of Modern European History*

JULIUS GOEBEL, Ph.D. *Professor of German*

WILLIAM FREEMAN MYRICK GOSS, M.S., D.Eng., *Dean of the College of Engineering, Director of the School of Railway Engineering and Administration, Director of the Engineering Experiment Station, and Professor of Railway Engineering*

GEORGE ABRAM MILLER, Ph.D., *Professor of Mathematics*

HERBERT WINDSOR MUMFORD, B.S., *Professor of Animal Husbandry*

WILLIAM ABBOTT OLDFATHER, Ph.D., *Associate Professor of the Classics*

SAMUEL WILSON PARR, M.S., *Professor of Applied Chemistry*

JAMES HARVEY PETTIT, Ph.D., *Professor of Soil Fertility*

STUART PRATT SHERMAN, Ph.D., *Professor of English*

ARTHUR NEWELL TALBOT, C.E., *Professor of Municipal and Sanitary Engineering*

HENRY BALDWIN WARD, Ph.D., *Professor of Zoology*

## HISTORY AND ORGANIZATION

Although for many years the University of Illinois had offered advanced students facilities for study and research in various lines, graduate work was undertaken under the name of the Graduate School for the first time in 1892. In 1894 the administration of the School was vested in the Council of Administration and the Vice-President of the University became Dean of the School. In 1906 the Graduate School was organized as a separate faculty, consisting of a dean and members of the University faculty assigned to this duty by the President. No means of support, however, were provided, separate from those provided for the undergraduate work. In the winter of 1906-7, the Forty-fifth General Assembly of the State passed an act appropriating \$50,000 per year for the support of a Graduate School of the Arts and Sciences in the State University. This appropriation has been continued by succeeding legislatures.

By an act of the Board of Trustees the teaching faculty of the Graduate School includes all members of the University faculty who give instruction in courses approved for graduate credit. The affairs of the School, however, are in charge of the executive faculty appointed each year by the President.

## ADMISSION

For admission to the Graduate School to work for a degree an applicant must hold a first degree either from the University of Illinois or from some other university or college of equivalent standing. Admission to particular graduate courses or departments may be secured only by those who have had the requisite undergraduate work in those courses or departments.

In order to be enrolled as a member of the Graduate School a student must be doing graduate work. The possession of a first degree does not entitle a student to be enrolled in the Graduate School, if the courses which he is taking are undergraduate.

Students of mature age who do not hold a first degree, but satisfy the Dean of the School and the officers of the departments in which they wish to work of their earnestness of purpose and special fitness, may be permitted to take work in the Graduate School without reference to candidacy for a degree. In order to secure this permission, however, a candidate must have had such preliminary preparation for the work he wishes to take up as would justify his

admission to the Graduate School as a candidate for a degree if he could meet the other requirements fully.

Each student is required to attend a minimum of four class, lecture, or laboratory exercises a week in the first year of his graduate study; and in no case is he permitted during his course to attend more than twelve a week.

Continuous residence and study are required of all members of the Graduate School, unless they are granted leave of absence by the Dean, upon recommendation of the professors in charge of their work, for the purpose of carrying on elsewhere studies or investigation in the line of work for their degrees.

The principal aim of graduate study is the development of the power of independent work and the promotion of the spirit of research. Each candidate for a degree is expected to have a wide knowledge of his subject and of related fields of work; for the graduate student is not expected to get from lecture and laboratory courses all the knowledge and training necessary to meet the requirements for his degree.

Students are warned against restricting themselves merely to the courses prescribed or suggested by the departments in which they are studying. Each student is expected to do a wide range of private reading and study; and in many cases will find it advisable to take one or more courses of lectures quite outside the field of his chosen subjects.

Application blanks for admission may be secured from the Dean of the Graduate School or from the Registrar of the University.

### THE MASTER'S DEGREE

Candidates for the degree of Master of Arts or Master of Science are required to do at least one year's work in residence and to write a thesis.

A candidate for a master's degree may do all his work in one subject, or he may select a major and one minor, or a major and two minors. A major or minor denotes the field of knowledge of a department, or such part thereof as constitutes a separate and independent division of that field. The candidate must do at least half his work in his major subject.

Each candidate for a master's degree is also required to present a thesis on some subject approved by the professor in charge of his major work and the faculty of the School. The requirement of a

thesis may be waived, however, upon the recommendation of the head of the department in which the student is doing his major work, and the approval of the Dean, provided application to waive the thesis is made at the beginning of the year. *In no case will permission to take the degree without a thesis be given if applied for later than the latest date for the approval of thesis subjects, as shown by the calendar.*

The thesis required from a candidate for a master's degree ordinarily will demand about one-fourth of the student's time. The thesis must be type-written, on "thesis paper," and the title-page must be printed. The thesis, in its final form, together with a certificate of approval by the proper officer, must be left by the student at the Dean's office at the time set in the calendar.

Credit is not given for work done in other universities. The candidate is examined here on the subjects offered by him for the advanced degree.

#### THE MASTER'S DEGREE IN ENGINEERING

Two classes of second degrees are open to graduates of the College of Engineering, namely, academic and professional.

The *academic* second degree in engineering is Master of Science, following Bachelor of Science, in Architecture, Architectural Engineering, Civil Engineering, Electrical Engineering, etc. This degree is conferred in accordance with the regulations described above *for academic work in residence only.*

The *professional* second degrees in engineering are as follows:

Master of Architecture after B. S. in Architecture.

Architectural Engineer after B. S. in Architectural Engineering.

Civil Engineer after B. S. in Civil Engineering or B. S. in Municipal and Sanitary Engineering.

Electrical Engineer after B. S. in Electrical Engineering.

Mechanical Engineer after B. S. in Mechanical Engineering.

Civil Engineer, Electrical Engineer, or Mechanical Engineer, after B. S. in Railway Engineering, according to the course.

Professional degrees are conferred upon two classes of candidates: 1. Graduates of the College of Engineering of the University of Illinois who have been engaged in acceptable professional work away from the University for a period of not less than three years after receiving the degree of Bachelor of Science. 2. Graduates of the University of Illinois, or of institutions of equal standing, who

have been engaged in acceptable professional work in residence at the University for a period of not less than three years after receiving the degree of Bachelor of Science.

In "acceptable professional work" may be included contributions to technical literature, activity in professional societies, investigations of engineering problems, and the teaching of engineering subjects.

A candidate must declare his candidacy and file with the Dean of the College of Engineering, as chairman of the committee in charge, a detailed statement covering his professional study and experience, not later than the first Monday in November preceding the commencement at which he proposes to qualify. Prior to December 31 next succeeding, he must submit for approval an outline of his proposed thesis and he must file his completed thesis not later than April 1. If the statement of professional experience and study and the thesis are accepted, the candidate must present himself at commencement in order to receive the degree.

Candidates for professional engineering degrees who already hold the degree of Master of Science may qualify for the professional degree after two years of professional work.

## THE DEGREE OF DOCTOR OF PHILOSOPHY

*General Statement of Requirements.*—The requirements for the degree of Doctor of Philosophy are a thorough mastery of a selected field of study, evidence of the power of independent investigation in this field, a broad knowledge of the wider field of study of which this major subject is a part, a general acquaintance with related fields of knowledge, and a mastery of all branches of study which are necessary to a full knowledge of the main subject. Each student who is seeking this degree is expected to choose for study and final examination a major subject, or field of study, and a first and second minor. The major subject is the field in which the student expects to become expert and an authority. The first minor must be a subject closely related to the major and may, under certain conditions and with proper approval, be a subdivision of the major field of study. The second minor should be chosen outside of the major field of study.

When a candidate chooses any subject as his major, and a division of that subject as his minor, he is not permitted to choose as a second



minor any division of work in that same department, excepting by vote of the executive faculty of the School.

The candidate's list of subjects must receive the approval of the head of the department in which he chooses his major work and of the Dean of the School.

*Period of Study.*—The minimum period of study required for securing the degree of Doctor of Philosophy is three years. The degree is conferred, however, not for residence during a certain period, but for scholarly attainments and power of investigation, as proved by thesis and examinations.

Candidates should note that credit is not given for work done in other universities, excepting in the sense that their residence at other institutions is counted towards the residence requirement for the doctor's degree.

At least the first two or the last one of the three years required must be spent at this University.

*Examinations.*—Towards the end of his second year of study, or, by special permission, at the beginning of his third year, the candidate for the degree must submit to a preliminary examination conducted by the members of the faculty with whom he is doing his principal work, in order to determine whether he will be accepted as a candidate for the degree in the following year. This examination is partly oral, and may be wholly so. At this time, or before, the candidate will be required to demonstrate his ability to read French and German, and any other language needed for the prosecution of his work.

On or before the last Monday in May of the year in which the candidate expects to come up for his degree, he must submit to a final examination by a committee appointed by the Dean of the Graduate School. This examination will be partly written. The candidate will also have, however, an oral examination. These examinations will not be confined to the courses which the candidate has attended in the University of Illinois only, if he has done part of the work elsewhere; nor even to the field covered by the courses specifically taken in this or other universities; but will be so conducted as to determine whether the candidate has a satisfactory grasp of his major subject as a whole, and a general acquaintance with the broad fields of knowledge represented by his course of study.

Before the candidate is admitted to the final examination and

the defense of his thesis, he may be required to take any other examination, oral or written, that is thought proper by the various departments in which he has studied. If, after having passed his preliminary examination, he fails in the third year of his study to meet the expectations of the professors in charge of his work, or in any way fails to maintain the standard of scholarship and power of research expected of him, he may be refused admission to the final examination.

The final examination in the major and minor subjects may not be divided. The examination must be taken all at one time even though it requires several sessions.

*Thesis.*—The power of independent research must be shown by the production of a thesis on some topic connected with the major subject of study. The candidate is expected to defend his thesis or dissertation before the members of the faculty, or as many of them as may wish to question him about it, in connection with his final examination.

The subject of the thesis should be chosen not later than the end of the second year of study, and must be submitted for formal approval by the faculty not later than the first Monday of November of the year when the degree is expected. A typewritten copy of the complete thesis, on thesis paper, with proper certificate of approval, must be in the hands of the Dean not later than noon of the Saturday nearest the middle of May.

The thesis must be printed and one hundred copies deposited in the library of the University before the degree is conferred. If, for any reason, the thesis cannot be printed and one hundred copies deposited before commencement time, the candidate must, before the first Monday in June, deposit a bond acceptable to the Comptroller of the University and the Dean of the Graduate School for the cost of printing his thesis, or such part thereof as may be regarded as sufficient to meet the requirements of the rules.

The title page of each thesis must bear the words "Submitted in partial fulfillment of the requirements of the degree of Doctor of Philosophy in—(here put the major subject), in the Graduate School of the University of Illinois." The title page must also contain the full name of the author, the full title of the thesis, the year of imprint, and, if a reprint, the title, volume, and statement of the pagination of the volume from which it is reprinted. Each thesis must have an appendix giving a short biography of the candidate,

including the institutions he has attended, his degrees and honors, the titles of his publications, and such other matters as may be pertinent.

## SCHOLARSHIPS AND FELLOWSHIPS

A number of fellowships and scholarships have been established by the Trustees of the University. To first year graduate students of ability and promise there are open a number of scholarships with a stipend of \$250 each and freedom from tuition, incidental, and laboratory fees. To second and third year graduate students, that is, those who have had one or two years of graduate study, there are open fellowships with a stipend varying from \$300 to \$500, with freedom from fees. The larger stipends are given only to students who are expected to take their degrees within the year. Each holder of a fellowship or scholarship must pay the matriculation fee of ten dollars, unless he holds a first degree from the University of Illinois, and also the diploma fee of five dollars on receiving his diploma.

Candidates for these scholarships and fellowships must be graduates of the University of Illinois, or of colleges or universities having equivalent requirements for bachelors' degrees.

Application must be made upon blanks to be obtained from the Dean of the Graduate School. These application forms should be addressed to the Dean of the Graduate School as early as possible in February of the academic year preceding that for which the fellowship is desired.

Persons appointed are required to send the Secretary of the Board of Trustees prompt notice of their acceptance or refusal; and to agree that, if accepted, the appointment will not be resigned to take a similar one in any other institution during the year for which it is awarded.

Nominations to fellowships are made upon the grounds of worthiness of character, scholastic attainments, and promise of success in the principal line of study or research to which the candidate proposes to devote himself.

Scholarships and fellowships are good for one year, but may be renewed for a second or a third year in special cases. An appointment as honorary fellow, without stipend, may be made as specified for paid fellowships in the case of any one who has shown distinguished merit in his work.

## RESEARCH FELLOWSHIPS IN THE ENGINEERING EXPERIMENT STATION

The Engineering Experiment Station is devoted entirely to research. Its purposes are the elevation of engineering education, and the study of problems of special importance to engineers and to manufacturing, railway, mining, and industrial interests.

Ten fellowships, each of five hundred dollars a year, have been established in the Engineering Experiment Station. Applicants to whom these fellowships are awarded agree to hold them for two years. They devote half of their time to the work of the Engineering Experiment Station, which work is not applicable toward a degree; the other half of their time is given to graduate study in candidacy for a degree. Application for these fellowships should be made to the Director of the Engineering Experiment Station.

## THE GRADUATE CLUB

The Graduate Club is an organization of the graduate students and graduate faculty. Its purpose is to furnish an opportunity for those working in different departments to become acquainted with one another and thus counteract the tendency toward narrowness which graduate work often develops.

# THE LIBRARY SCHOOL

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For a description of the *Library Building*, see page 60; for an account of the *libraries* themselves, see pages 67, 68; for the *collection in library economy*, see page 68; for *fees*, see page 122.

## AIM AND SCOPE

It is the purpose of the Library School to offer a two years' course of instruction to students who wish to enter library work as a profession, and to offer certain library courses to students in other schools and colleges of the University of Illinois who may wish to elect them as a part of their course of training. The course is planned so that students who complete the first or junior year's work are prepared to accept positions in library service, the schedule of courses in this year being so arranged as to cover the generally accepted methods and practices in modern library economy. In the second or senior year some of the junior subjects are gone over more intensively, greater emphasis being placed upon historical and comparative methods of treatment; other subjects are introduced to give the student a broad outlook and a scholarly, technical, and administrative equipment for the more responsible positions.

One or two years of training will not take the place of years of experience, but they will make the student more adaptable and his general library service more intelligent. The practical work of the course amounts to over three months of time, counting eight hours a day, and this is more valuable, because more varied, than if taken in three consecutive months in any one library. Moreover, the library school student has the benefit of comparative study, while the apprentice becomes skillful in the ways of one library only. Although stress is laid upon simplicity and economy, methods are taught to enable students to work in large libraries where bibliographic exactness is required. Emphasis is laid upon the extension of the activities of the public library, and upon the importance of co-operation between the library and the schools and other educational agencies.

A student in any other school or college of the University of Illinois may elect any course for which he is prepared. These courses will help students in general reading, in research work, in club work, as high school teachers, or as members of a library committee or a board of trustees. The school also offers a course of eighteen hours on the use of the library and the ordinary reference books, which will help in general reading or study.

### ENTRANCE REQUIREMENTS

Admission to the Library School is conditioned upon the presentation of credentials showing that the applicant holds a bachelor's degree in arts or science from the University of Illinois or has had other equivalent training.

Application blanks for admission may be secured from the Director of the School, and these, filled out, should be filed, together with such documentary material as the candidate may offer, showing qualifications for admission, not later than the registration days in September. It is to the candidate's interest to present the application and certificates early, in order that the question of admission may be settled before he comes to the University.

### ADVANCED STANDING

College graduates who have had approved library experience or who have attended other library schools may be accorded advanced standing by securing credit for some of the courses required for graduation. After satisfying all entrance requirements and after matriculation, the applicant for advanced standing may secure such credit either by examination or by transfer of credits from another institution offering courses in library economy.

### SPECIAL STUDENTS

It is the practice of this School to admit as special students only those mature persons who, though unable to meet the formal requirements for entrance, are substantially prepared for thorough and advanced work. Such persons must present evidence of possessing the requisite information and ability to pursue profitably, as special students, the chosen subjects, and some substitute for the regular requirements for entrance, such as approved library or teaching experience, foreign travel, etc. Preference will be given to those already engaged in library work, especially in Illinois, who may desire more adequate training in particular subjects.

## LIBRARY VISITS AND FIELD WORK

Each year all the students in the School visit the libraries, and certain of the book binderies, book stores, and printing establishments of either Chicago and vicinity or St. Louis and vicinity. During this visit, which occupies one week, the students are accompanied by a member of the faculty.

In order to assure a varied library experience, each student in the senior year is required to spend one month in an assigned public library, working, as far as practicable, under the same conditions as a member of the staff of that library.

## SCHEDULE OF COURSE

The course is two years in length. For graduation a student must receive credit for all courses except those marked with an asterisk (\*), which are elective. The degree of Bachelor of Library Science is conferred on a student who has completed the two years' course.

## JUNIOR YEAR

FIRST SEMESTER	SECOND SEMESTER
2 <sup>1</sup> Reference work (3 hrs.)	2 <sup>1</sup> Reference work (3 hrs.)
3 Selection of books (2 hrs.)	3 Selection of books (2 hrs.)
4 Practice work, 4 hours per week (2 hrs.)	4 Practice work, 4 hours per week (2 hrs.)
16 Order, accession, and shelf work (2 hrs.)	7 History of libraries (2 hrs.)
17 Classification and book numbers (3 hrs.)	19 Trade bibliography (1 hr.)
18 Cataloging (3 hrs.)	20 Loan department (1 hr.)
23 Library administration and current library literature (1 hr.)	21 Printing, binding, indexing (2 hrs.)
	22 Library extension (3 hrs.)
	23 Library administration and current library literature (1 hr.)

## SENIOR YEAR

6 Subject bibliography (2 hrs.)	6 Subject bibliography (2 hrs.)
8 *Advanced reference work (2 hrs.)	9 *Bookmaking (2 hrs.)
10 Practice work, 8 hours per week (4 hrs.)	10 Practice work, 8 hours per week (4 hrs.)
13 Public documents (2 hrs.)	13 *Public documents (2 hrs.)
15 Seminar (2 hrs.)	15 Seminar (2 hrs.)
24 Selection of books (2 hrs.)	24 Selection of books (2 hrs.)
27 Bibliographical institutions (1 hr.)	25 Advanced classification and cataloging (1 hr.)
26 Library administration (3 hrs.)	26 Library administration (3 hrs.)
	28 *Practice work in various departments of the library (1 to 4 hrs.)

## LIBRARY CLUB

Any member of the Library School faculty or of the staff of the University Library and any student in the Library School may become a member. Six meetings are held each year to discuss professional questions, and for social purposes.

<sup>1</sup>The numbers in these columns refer to the Courses in Library Science in the General Description of Courses.

# THE SCHOOL OF MUSIC

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For *admission* to the School of Music, see the general statement of entrance requirements of the University, page 75. For *fees*, see page 123. For the *faculty* of the School of Music and descriptions of the *courses* in Music, see under "Music" in the "General Description of Courses," Part III.

## AIMS AND SCOPE

The School of Music offers regular courses leading to the degree of Bachelor of Music, and a teacher's certificate in public school music.

Students who are not working for the degree in music may receive a statement from their instructors upon completing not less than one year of college work.

Classes in ear training meet twice each week. The fundamental principles of musical notation are studied thoroughly, and the ear is trained to recognize intervals, chords, etc., so that the student may eventually think music. Music students are required to attend these classes.

The sight-singing classes meet twice each week. This work is required of music students.

Choral, orchestral, and ensemble work are required of all students who are sufficiently advanced.

A series of lectures and recitals is given each year. Only artists of the best reputation appear. Music students are admitted free and are required to attend these concerts.

The instructors in the School of Music give recitals and lectures on musical subjects during the year.

The courses in the history of music and musical theory, as well as the work in the University Orchestra and the University Choral Society, may be taken by students in other departments without fee.



## REQUIREMENTS FOR GRADUATION

Candidates for the degree of Bachelor of Music must offer credit for 130 semester hours, including the prescribed subjects named below, together with an acceptable thesis on a topic related to music.

## Course in Music

## 1. PRESCRIBED SUBJECTS

## (a) History and Theory of Music

Music 1—History of Music.....	4 hours
Music 1a—Acoustics.....	2 hours
Music 2—Harmony.....	4 hours
Music 3—Advanced Harmony.....	6 hours
Music 4—Counterpoint, Canon, and Fugue.....	6 hours
Music 5—General Theory, Free Composition.....	5 hours
Total, history and theory.....	27 hours

## (b) Practice

Music	Piano	Voice	Violin	'Cello	
First Year.....	7	12	17	32	12 hours
Second Year.....	8	13	18	33	12 hours
Third Year.....	9	14	19	34	14 hours
Fourth Year.....	10	15	20	—	16 hours
Music—Minor Subject.....	12a or 17a	7a or 17a	7a or 12a	—	4 hours
Music 23—Ear Training (2 years).....					2 hours
Music 24—Sight Singing (2 years).....					2 hours
Total, practice.....					62 hours

## (c) Prescribed Subjects other than Music

French, German, or Italian.....	16 hours
English 1.....	8 hours
*Rhetoric 1.....	6 hours
Rhetoric 3.....	3 hours
Military 1, 2 (for men).....	5 hours
Physical training 1 and 1a (men).....	2 hours
Physical training 7 and 9 (women).....	3 hours

Total, for men, 44 hours; for women..... 40 hours

TOTAL, PRESCRIBED SUBJECTS:.....For men, 129 hours; for women 125 hours

## 2. ELECTIVES

The remaining hours necessary to make up the required total of 130 hours—one hour for men, five hours for women—may be made in other musical subjects or in subjects offered in the colleges of Literature and Arts and Science.

## COURSE IN PUBLIC SCHOOL MUSIC

The aim of the Course in Public School Music is to prepare competent teachers and supervisors of music for the public schools. Students completing the course are granted teachers' certificates.

\*Those students who show by examination a proficiency in composition sufficient to qualify them for the second semester's work in Rhetoric 1 may be excused from the first semester's work. See page 81.

An opportunity for practice teaching is offered. The course is one year in length, and comprises the following prescribed subjects:

**Public School Music Course**

Music 1—History of Music.....	4 hours
Music 2—Harmony .....	4 hours
Music 23a—Ear Training.....	2 hours
Music 24a—Sight Singing.....	2 hours
Music 25—Methods of Teaching.....	8 hours
Practical Music, major, Piano or Voice (7 or 12).....	12 hours
Practical Music, minor, Voice or Piano (12a or 7a)).....	4 hours
	<hr/>
	36 hours

Advanced students may satisfy a part of the foregoing requirements by examination; in no case, however, is a student permitted to take less than 30 hours of work.

### MUSICAL ORGANIZATIONS

*The University Choral and Orchestral Society* is conducted by the Director of the School of Music, and gives a series of concerts throughout the year. The orchestra meets for two hours' rehearsal once a week; it is open to all students who qualify for membership. The chorus meets once a week for rehearsal of choral works. Singers not connected with the University are admitted by examination.

*The Military Band* is conducted by the instructor in band instruments. Besides giving several concerts during the year, it furnishes music for regimental formations and ceremonies and other occasions as required by the President of the University. Membership is decided by competitive examination. A Second Band is also conducted, in order that all students who play band instruments ordinarily well may have an opportunity to play in a band. Each full term of service in the Band counts for one term of the required work in Military Science. After obtaining credit for four semesters' work those who are continued in the Band for not less than one year are paid an amount equal to the term, or "incidental", fees of the year.

# THE SCHOOL OF EDUCATION

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## FACULTY

The faculty of the School of Education includes all those instructors who offer courses primarily intended for prospective teachers.

## PURPOSE

It is the purpose of the School to bring together all the resources of the University which contribute in a professional way to the preparation of three classes of workers in the public school system:

1. The High School Principal and the High School Teacher.—The School provides for the needs of the high school principal by supplying a general knowledge of the various subjects of the high school curriculum, as well as a knowledge of organization and administration as applied to the secondary school; and for those of the departmental specialist by supplying a more extended knowledge of a few subjects.

2. The Supervisor of Special Subjects.—Manual training, agriculture, domestic science, music, drawing, and physical training, as now taught in the better school systems, are subjects which demand specially trained supervisors; the facilities of the University for instruction in these subjects are thoroughly utilized.

3. The School Superintendent.—Demanding, as he does, a knowledge of the development of school systems, a keen insight into pedagogical problems, and an appreciation of child-nature, the superintendent needs extended preparation; this the School of Education is prepared to give.

## COURSE

The course of study of the School of Education is made up of offerings selected from the work of the various departments of instruction in the University. The course is elective except for the

graduation requirements of the college in which the student is registered. Certain subjects are, however, required of all students who wish to be officially recommended by the University for high school positions. The work is arranged in four groups:

(a) Courses in education, psychology, and sociology bearing directly upon the profession of the teacher.

(b) Courses especially intended for teachers, offered by various departments of the University.

(c) Suggested programs for students preparing to become special teachers and supervisors of agriculture, domestic science, drawing, music, or physical training.

(d) Suggested programs for continuous and progressive work in subjects represented in the high school curriculum.

### SPECIAL LECTURES

A number of special lectures are offered each year by the School of Education.

### COMMITTEE ON APPOINTMENT OF TEACHERS

This committee has in charge the naming of candidates from among graduates of the University for positions as teachers or supervisors in public schools, colleges, and technical schools.

The Director of the School of Education is chairman of this committee, and the official nominations of students and graduates of the University to public school positions are made through his office.

The following resolution was adopted by the University Senate, June 3, 1912:

1. The University Committee on Appointments is authorized to issue its recommendation, signed by the committee as the agent of the University, in all cases in which it is satisfied with the student's scholarship and ability to teach. The committee shall regard the scholarship requirements as met if, in addition to carrying the professional courses mentioned in the next paragraph, the student has passed with an average grade of 85 in the courses necessary to constitute a major in the principal subject which he wishes to teach, and in courses aggregating a minimum varying from six to twelve semester hours (according to subject, and at the discretion of the committee) in each of the other subjects for which he wishes to be recommended. The committee shall, however, in each case secure the written opinion of the departments concerned, of the scholarship

of the applicant, and shall view the evidence of scholarship as shown by the records in the light of this opinion; and if there appear to the committee to be reasons which, from their nature, can not be shown by mere records, for questioning the scholastic ability of the student, the committee may, in its discretion, withhold the recommendation.

2. A candidate must have successfully completed the following courses in the department of education:

a. An introductory course which shall aim (1) to acquaint the prospective teacher with the public-school system as it exists today in the United States, and (2) to present a brief outline of the principles of education. (A three-hour course.)

b. A course in the technique of teaching, accompanied by observation of class-room work in secondary schools, and including a discussion of class-management (routine and discipline), the elements of school hygiene, and the types of school exercises. (A three-hour course.)

3. The Director of the School of Education may, in his discretion, excuse a candidate from the professional courses outlined above (1) if the candidate is a normal school graduate or has taken equivalent courses in a normal school or in another college or university; or (2) if the candidate has had at least one year of successful teaching experience. If, at the time of registration with the Committee on Appointments, the candidate has not completed one of the required courses but is enrolled at that time in the course, a committee recommendation may be given with the approval of the instructor in charge of the course.

The courses mentioned in Section 2 of the above resolutions are (a) Education 1, Principles of Education, which is now offered as a three-hour course during the first semester; and (b) Education 10, Observation and Technique of Teaching, a three-hour course. Education 10 may be taken either the first or the second semester.

# THE SCHOOL OF RAILWAY ENGINEERING AND ADMINISTRATION

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## GENERAL STATEMENT

The School of Railway Engineering and Administration has been established to prepare men broadly for the technical and administrative departments of railroads. The work offered is arranged in five different courses, any one of which is designed to occupy four years' time. The courses are:

- Railway Civil Engineering
- Railway Mechanical Engineering
- Railway Electrical Engineering
- Railway Transportation
- Railway Traffic and Accounting

The first three of these courses are administered by the College of Engineering, and a description of them appears with that of other courses offered by this College. Students are admitted to them under the same conditions as to other courses of the College of Engineering, and they have available for their use all of the library, drafting-room, and laboratory facilities which constitute the equipment of this College. The last two courses are administered by the College of Literature and Arts; they are described in detail in connection with the other courses of this College. Students are admitted to them under the same conditions as to other courses of the College of Literature and Arts.

It is the purpose of each of these courses to add to the broad foundation of discipline and training which should be supplied by every college course such specialized training as will be most useful to those who look forward to careers in railway service.

## MILITARY SCIENCE

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The military instruction is under the charge of an officer of the United States Army. The course as a whole has special reference to the duties of officers of the line. A full supply of arms and ammunition is furnished by the War Department, including 1,200 U. S. magazine rifles (model 1898) and accoutrements, two field pieces of artillery, and full equipment for a signal corps and a hospital corps.

Every male student under twenty-five years of age, able to perform military duty, and not excused for sufficient cause, is required to drill twice each week until he has gained credit for four semester hours. He is also required to study drill regulations for infantry, and to recite upon the text once a week until he gains credit for one semester hour.

The practical instruction begins as soon as possible after a student enters the University. The standings in study and drill are placed on record with other class credits; one semester of recitations and drill counts two hours, and the three remaining semesters of drill three hours. This work is required for graduation in all the undergraduate colleges of the University.

The regiment, four battalions of four companies each, is composed mainly of the members of the freshman and sophomore classes. The non-commissioned officers are usually selected from the sophomore class, the lieutenants from the junior class, and the field officers and captains from the senior class and graduate school. There are 1,450 cadets and seventy-one commissioned officers in the regiment.

Artillery and signal detachments are organized mainly from those students of the second year or sophomore class who have made more than an average standing in the work of the previous year.

A special military scholarship, good for one year, is open to each student who attains the grade of a commissioned officer; its value is paid to the holder at the close of the year. Appointments in the regi-

ment are made on the nomination of the commandant of cadets confirmed by the Council of Administration.

Towards the close of the year a committee appointed by the President of the University examines candidates for nomination to the Governor of the State to receive commissions as brevet captains in the State militia. Candidates must be members of the senior class in full standing at the time of this examination; must have completed the course of military studies; must have served two semesters as commissioned officers; and must be approved by the Council of Administration as having good reputations as scholars, officers, and gentlemen.

The uniform is of cadet gray, the coat trimmed with black mohair braid, the trousers with black cloth stripe, cut after the U. S. Army pattern. During warm weather a blue flannel shirt is worn instead of the coat. In order that all uniforms worn at the University may be, in quality, make, and finish, in strict accordance with the specifications adopted by the Board of Trustees, all students enrolled in the military department are required to obtain them from that firm only that may, for the time being, be under agreement and bond with the Trustees to furnish said uniforms at a stated price and of standard quality.

The University military band is composed of students, and every full term of service therein is counted as one term of drill. Those who play in the band after having earned their five military credits necessary for graduation have their incidental fees remitted at the end of each year. Besides giving several concerts during the year, the band furnishes music for regimental formations and ceremonies and other occasions as required by the President of the University. Membership is decided by competitive examination.



# PHYSICAL TRAINING

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## FOR MEN

The object of the work in this department is to preserve and improve the bodily health of the students by rational exercises and to teach proper intercollegiate sports. Regular classes are formed in swimming and fencing and for drill on the various gymnasium appliances. Lectures are given on personal hygiene.

All competitive athletic games are under the direct supervision of the Director of Physical Training, and an examination is required to show that membership on any team will not cause injury, but will tend to improve the physical condition. No student whose class work is unsatisfactory is allowed to play on a University team.

For a description of the Men's Gymnasium, see page 60.

## FOR WOMEN

The object of the work of this department is to preserve and improve the general health, carriage, and co-ordination of the young women of the University. Each student is given a physical examination; suitable exercise is prescribed and advice given.

The class work embraces corrective, hygienic, and recreative exercise, including free and light gymnastics, marching, fancy steps, games, Maypole, etc. Tennis, hockey, basket-ball, volley-ball, German-ball, and quoits are played in season.

The gymnasium is open at certain hours and under suitable restrictions to all women of the University. The uniform consists of black serge bloomers, white "middy" blouse, and gymnasium shoes.

The swimming pool is open daily, except Saturday, from 10 to 12 a. m. and from 2 to 5 p. m. The regulation swimming suit of one piece must be made of either denim or mohair.

For a description of the Women's Gymnasium, see under Woman's Building, page 61.

## THE SUMMER SESSION

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EDMUND JANES JAMES, Ph.D., LL.D., *President of the University*  
WILLIAM CHANDLER BAGLEY, Ph.D., *Director of the Summer Session*

### STAFF OF INSTRUCTION—1912

SAMUEL HERBERT ANDERSON, A.M., *Assistant in Physics*  
IONE ARMSTRONG, *Instructor in Library Science*  
WILLIAM CHANDLER BAGLEY, Ph.D., *Professor of Education*  
CLARENCE WILLIAM BALKE, Ph.D., *Assistant Professor of Chemistry*  
CHARLES ANTHONY BARNHART, A.M., *Assistant in Mathematics*  
PHILIP STEPHAN BARTO, A.M., *Assistant in German*  
HERBERT JEWETT BARTON, A.M., *Professor of the Latin Language and Literature*  
VERNA BROOKS, A.B., *Assistant in Physical Training for Women*  
WALTER BUCHEN, A.B., *Assistant in English*  
LAURIE LORNE BURGESS, Ph.D., *Associate in Chemistry*  
GEORGE ERNEST CARSCALLEN, A.M., *Assistant in Mathematics*  
JOHN MANTEL CLAPP, A.M., *Professor of English, Lake Forest College*  
WILLIAM WALTER CORT, A.M., *Instructor in Zoology.*  
A. F. COUTANT, *Instructor in Zoology*  
CHARLES E. DECKER, *Instructor in Physiography*  
WILLIAM WELLS DENTON, Ph.D., *Assistant in Mathematics*  
CLARENCE GEORGE DERICK, Ph.D., *Associate in Chemistry*  
GEORGE WILLIAM DOWRIE, A.M., *Fellow in Economics*  
JAMES MERION DUNCAN, *Instructor in Mechanical Engineering*  
JAMES EVERETT EGAN, A.B., *Assistant in Chemistry*

- ARNOLD EMCH, Ph.D., *Assistant Professor of Mathematics*  
NEWTON EDWARD ENSIGN, A.B., B.S., *Instructor in Theoretical and Applied Mechanics*  
AUGUSTA DILLMAN EVANS, A.B., *Assistant in Agricultural Extension*  
STANLEY PRINCE FARWELL, M.S., *Instructor in Theoretical and Applied Mechanics*  
JUSTUS WATSON FOLSOM, Sc.D., *Assistant Professor of Entomology*  
GUY STANTON FORD, Ph.D., *Professor of History*  
KARL FREDERICK GEISER, Ph.D., *Professor of Political Science, Oberlin College*  
HUGH GLASGOW, A.B., *Assistant in Entomology*  
HENRY DAVID GRAY, Ph.D., *Assistant Professor of English, Leland Stanford Jr. University*  
ERNEST MILTON HALLIDAY, A.B., LL.B., *Associate in English*  
LEO GREGORY HANA, *Director of the Men's Gymnasium*  
CHARLES HART HANDSCHIN, Ph.D., *Professor of the German Language and Literature, Miami University*  
EDWARD CARY HAYES, Ph.D., *Professor of Sociology*  
FELIX EMIL HELD, A.M., *Assistant in German*  
MARY B. HILL, *Assistant in Art and Design*  
HORACE ADELBERT HOLLISTER, A.M., *High School Visitor*  
CHARLES FREDERICK HOTTES, Ph.D., *Assistant Professor of Botany*  
PAUL EDWARD HOWE, Ph.D., *Instructor in Physiological Chemistry*  
LLOYD THEODORE JONES, A.M., *Assistant in Physics*  
OLIVER H. KAMM, B.S., *Assistant in Chemistry*  
CHARLES TOBIAS KNIPP, Ph.D., *Assistant Professor of Physics*  
PHILIP AUGUSTUS LEHENBAUER, A.M., *Assistant in Botany*  
ELLEN S MCCARTHY, Ph.D., *Instructor in Chemistry*  
EUGENE IRVING MCCORMAC, Ph.D., *Professor of American History, University of California*  
ELMER MASSEY McDONALD, *Instructor in Agronomy*  
OSCAR ROSS MARTIN, A.B., *Assistant in Economics*  
WILFORD STANTON MILLER, A.M., *Assistant and Secretary in the School of Education*  
CHARLES HENRY MILLS, D.Mus., F.R.CO., *Professor of Music*

CLARENCE EUGENE NOERENBERG, A.B., A.E., *Instructor in Theoretical and Applied Mechanics*

ARETAS WILBUR NOLAN, M.S., *Assistant Professor of Agricultural Extension*

WILLIAM ABBOTT OLDFATHER, Ph.D., *Associate Professor of the Classics*

THOMAS EDWARD OLIVER, Ph.D., *Professor of Romance Languages*

JOSEPH C. PARK, *Director of Industrial Education, Oswego, N.Y., State Normal School*

HARRY GILBERT PAUL, Ph.D., *Assistant Professor of the English Language and Literature*

FRANCIS MARION PORTER, M.S., *Instructor in General Engineering Drawing*

MAURICE HENRY ROBINSON, Ph.D., *Professor of Industry and Transportation*

SIDNEY ARCHIE ROWLAND, JR., A.B., *Assistant in Mathematics*

HAROLD ORDWAY RUGG, B.S., C.E., *Instructor in History of Education*

WILLIAM FREDERICK SCHULZ, Ph.D., *Assistant Professor of Physics*

DAVID LEONARD SCROGGIN, *Instructor in Mechanical Engineering*

GEORGE WALLACE SEARS, M.S., *Assistant in Chemistry*

ORRIN HAROLD SMITH, A.M., *Assistant in Physics*

WILLIAM HERSCHEL SMITH, B.S., *Assistant in Animal Husbandry*

ARTHUR JERROLD TIEJE, Ph.D., *Assistant in English*

RALPH EARLE TIEJE, A.M., *Assistant in English*

VINCENT HOLLIS TODD, Ph.D., *Fellow in German*

GUSTAF ERIC WAHLIN, Ph.D., *Instructor in Mathematics*

HENRY BALDWIN WARD, Ph.D., *Professor of Zoology*

### GENERAL STATEMENT

The Summer Session of the University of Illinois for 1912 opened on June 17, and closed on August 9, making a term of *eight weeks*. The Summer Session of 1913 will open on June 16, and close on August 8.

All of the courses extend through the eight weeks. Students who wish to remain for only six weeks may obtain from the Director of

the Session a certificate of such attendance, but university credit will not be given for six-weeks courses.

Students may register for courses aggregating eight credit hours or less.

### PURPOSE

The primary purpose of the Summer Session is to meet the needs of teachers in the public schools who wish to spend a part of the summer vacation in study or investigation. The greater number of courses offered are designed particularly for high school teachers, supervising officers, and teachers of special subjects (art, music, manual training, domestic science, agriculture, etc.) and for college instructors, school supervisors, and principals who are working for advanced degrees. At the same time, students who may not fall within these groups are welcomed, and several courses of a more general nature are provided to meet their needs.

### PREPARATION FOR STATE TEACHERS' CERTIFICATES

To teachers who desire to make thorough preparation for the State certificate examinations, the Summer Session offers marked advantages, especially in connection with the professional subjects. The following excerpt from Circular No. 53 of the Office of the State Superintendent of Public Instruction indicates the method of securing State certificates:

"Certificates of qualification issued by the Superintendent of Public Instruction shall be valid in every district of the State during the good behavior of the holder. Such certificates shall be granted only upon a public examination, complete in itself, under such regulations and by such examiners, as the Superintendent of Public Instruction shall prescribe and appoint. The holder of any State certificate, while he continues to teach, shall, annually, before entering upon his duties as a teacher, present his certificate to the county superintendent for registration. A fee of one dollar shall be charged therefor and covered into the institute fund."

The examination will be held July 22 to 25, 1913. Candidates for the "General Certificate" must take the examination in Springfield. The "State Elementary-School Certificate", the "State High-School Certificate", and the "State Supervisory Certificate" may be obtained by examinations held on the above dates at the University of Illinois, *provided that at least fifteen applicants notify the State Superintendent, prior to June 10, 1913, of their wish to take the examination here.* Further information concerning the examinations may be obtained by addressing Hon. F. G. Blair, State Superintendent of Public Instruction, Springfield, Illinois.

## GRADUATE WORK IN THE SUMMER SESSION

During the past three years the Summer Session has placed increasing emphasis upon graduate courses leading to the master's degree. The various departments which are closely related to high school teaching and to educational administration have been selected as the centers of this emphasis. An attempt is made to vary the graduate offerings from year to year so that advanced students each year may find acceptable work in their chosen fields.

The normal requirement for the master's degree is full work of graduate grade, satisfactorily completed, through one year of residence. This means a residence of thirty-six weeks at the University. Qualified graduate students may fulfill this residence requirement in four summer sessions of eight weeks each and an additional four weeks' study at the University under the direction of the person in charge of the major work. Thus the student, by working at the University for one week before or after each session under the direction of the professor in charge of his major subject, may earn the master's degree in four summers.

In certain cases it will be possible for the graduate student to complete the last fourth of his residence requirement under a leave of absence. This privilege may be granted in the event that the student is able to take advantage of opportunities for research and investigation that are not afforded in the University community. Superintendents, principals, and class-room teachers frequently find it possible to carry on investigations in connection with their school work. There are, for example, numerous problems of school administration and of teaching for which the public school itself forms the only available "laboratory." Where the investigation of such problems is prosecuted with the coöperation of a university department, it may be possible to count the work toward the master's degree.

## SUMMER COURSES IN LIBRARY TRAINING

Beginning Monday, June 17, 1912, and continuing for six weeks the Library School conducted a Summer Session *to which were admitted only those actually employed as librarians or library assistants, or under definite appointment to serve in such positions.* The curriculum is planned to meet especially the needs of workers in public libraries and in high school libraries of Illinois and no tuition fee is charged students entering from this State; students entering

from libraries in other states pay a tuition fee of \$12. The work is under the general direction of the faculty of the Library School.

### FEES

A tuition fee of twelve dollars (\$12) is required of all students in regular attendance at the Session. This entitles one to admission to regular courses and to all special lectures. An extra laboratory fee is charged in some courses for materials used. Any single course may be taken for a fee of six dollars (\$6) and the laboratory fee, if there be any in connection with the course taken. A single course is understood to mean not more than two and one-half credit hours.

### SCHOLARSHIPS

By ruling of the Board of Trustees of the University, all high school teachers in Illinois, and all other teachers in the State who are qualified to matriculate in the University as regular students, are entitled to Summer Session scholarships, exempting them from payment of the tuition fee. To matriculate regularly in the University, one must either pass the entrance examinations, or present a certificate from an accredited high school or other evidence showing the completion of the requisite amount of preparatory work.

By a more recent resolution of the Board of Trustees, the scholarship privilege is extended to persons graduating from the Illinois State normal schools during the academic year preceding the Session in which the scholarship is desired, and to persons (otherwise qualified) who have not been teachers, but who are under contract to teach in the State during the coming year.

Application blanks for scholarships may be obtained from the Director.

### REGISTRATION

Students will present themselves for registration on Monday, June 16, 1913.

### DESCRIPTION OF COURSES—SUMMER SESSION OF 1912

#### EXPLANATION OF ABBREVIATIONS

"S," which is prefixed to each of the courses offered, means "summer," and is used to distinguish such courses from those of the same number offered during the regular college year.

The number in parenthesis after each course indicates the number of hours of credit given. For a definition of the term "credit hour," see page 257.

There are usually two lectures, recitations, or laboratory periods for each credit hour.

*Unless otherwise stated* each course extends through the eight weeks of the session.

The asterisk (\*) indicates those courses for which graduate credit is granted. Only courses so marked count toward the master's degree. The credit in hours indicated for such courses has reference only to undergraduate students. Graduate students are not granted credit in terms of semester hours.

## AGRICULTURE

(See also CHEMISTRY and ENTOMOLOGY.)

Assistant Professor NOLAN, Mr. SMITH, Mr. McDONALD, Miss EVANS

### A. COMMON SCHOOL AGRICULTURE

S 9. ELEMENTARY AGRICULTURE.—For teachers in elementary and rural schools: materials and methods suitable for the introduction of agriculture into the common schools in such a way as to lead to improved practice, or to the study of technical agriculture in the higher schools. (2½). Miss EVANS

### B. SECONDARY SCHOOL AGRICULTURE

Primarily for science teachers in high schools: general agriculture adapted to secondary schools, with emphasis on the subject-matter of agriculture, and with such reference to the methods of presentation as the needs of the class demand. *The work is planned to continue throughout four summer sessions, the course in each session to cover the work of one year of high school agriculture.*

#### 1912 SESSION—FIRST YEAR HIGH SCHOOL AGRICULTURE

S 1. DOMESTIC ANIMALS AND THEIR PRODUCTS.—(a) History, development, and characteristics of the various breeds of live stock; type from the standpoint of breeder, feeder, and butcher; judging; methods suitable for the secondary school. (b) Beef, pork, and mutton production. (2½). Mr. SMITH

S 2. FOREST, ORCHARD, AND GARDEN STUDIES.—(a) General forestry; life history of trees; influences which affect the growth; tree societies and forest conditions; enemies of the forest; the farm



woodlot; origin, condition, and extent of woodlots; woodlot management; practical studies of given woodlots. (b) Locating, laying out, and planting the orchard; care of trees; picking, storing, and marketing fruit. (c) Laying out and planning home gardens; cultural requirements of standard vegetable crops; beautifying home and school grounds. (2½). Assistant Professor NOLAN

1913 SESSION—SECOND YEAR HIGH SCHOOL AGRICULTURE

(Given in 1912 also.)

S 3. AGRONOMY—FARM CROPS.—Grains; description and varieties; legumes, kinds, values, and uses; grasses, weeds, etc. (2½).

Mr. McDONALD

S 4. SOIL ELEMENTS AND CROP PRODUCTION.—Soil physics, origin, classification, moisture relations, and methods of handling; soil fertility, soil elements, and methods of soil improvement; crop production, planting, cultivating, and caring for staple crops. (2½).

Mr. McDONALD

1914 SESSION—THIRD YEAR HIGH SCHOOL AGRICULTURE

S 5. FARM MECHANICS.—(2½).

S 6. FARM MANAGEMENT.—(2½).

1915 SESSION—FOURTH YEAR HIGH SCHOOL AGRICULTURE

S 7. PLANT AND ANIMAL IMPROVEMENT.—(2½).

S 8. SPECIAL ELECTIVE AGRICULTURE.—(2½).

ART AND DESIGN

Miss HILL

S 1. ELEMENTARY.—Form drawing from still life, cast, and nature; principles of outline and shading in pencil, charcoal, and crayon; lectures on the principles of perspective. (2). Miss HILL

S 20. ART FOR THE COMMON SCHOOLS.—The planning and execution of work in the several divisions of common school art study; design; black-board drawing. (2). Miss HILL

BIOLOGY

(See BOTANY, ZOOLOGY, and ENTOMOLOGY.)

BOTANY

Assistant Professor HOTTES, Mr. LEHENBAUER

NOTE:—A number of informal meetings and excursions are

planned to afford students registered in botany an opportunity for gaining facility in the use of the analytical key of the Manual, and for becoming acquainted with the local flora.

S 21. PLANT PHYSIOLOGY.—The more important physiological processes of plants. Text: Coulter, Barnes, and Cowles, Vol. 2. *A Text-book of Botany*. (Laboratory Fee \$1.00.) (2½).

Assistant Professor HOTTES, Mr. LEHENBAUER

*Prerequisite:* Entrance credit in botany or its equivalent.

S 22. TECHNIQUE AND ELEMENTARY HISTOLOGY.—Methods of collecting and preserving material for the classroom; preparation of permanent slides and museum specimens; anatomy of the vegetative organs and its relation to their function. Text: Stevens' *Plant Anatomy*, 2d edition. (Laboratory Fee \$2.00.) (2½).

Assistant Professor HOTTES

*Prerequisite:* Botany S-21 or its equivalent.

#### COURSES FOR GRADUATES

\*S 101. CYTOLOGY.—The influence of external agents on the cell; special subjects for investigation; reports; discussion of current literature and research results. Assistant Professor HOTTES

\*S 102. PHYSIOLOGY.—The effects of external stimuli on growth and movement; reports; discussions of recent literature and research results. Assistant Professor HOTTES

#### CHEMISTRY

Assistant Professor BALKE, Dr. BURGESS, Dr. DERICK, Dr. MCCARTHY, Dr. HOWE, Mr. EGAN, Mr. SEARS, Mr. KAMM

NOTE:—Graduate students whose major subject is not chemistry or agriculture may take for their graduate work S 5a, S 9, S 9a, S 9b, S 14, or S 13a. Students whose major subject is chemistry may take S III.

S 1. ELEMENTARY CHEMISTRY.—General inorganic chemistry; non-metallic elements. Illustrated lectures; recitations; laboratory. Alexander Smith's *General Chemistry for Colleges*. (5).

Assistant Professor BALKE, Dr. MCCARTHY, Mr. EGAN, Mr. SEARS

S 1a and S 1b. INORGANIC CHEMISTRY.—(For students who have had one year of high school chemistry, or inorganic chemistry for engineering students.) (4). Assistant Professor BALKE

S 2. DESCRIPTIVE INORGANIC CHEMISTRY.—(Continuation of

S 1). The metallic elements, their compounds. Recitations; laboratory. Alexander Smith's *General Chemistry for Colleges*. (2).

*Prerequisite:* Chemistry 1.

Assistant Professor BALKE

S 3. QUALITATIVE ANALYSIS.—Lectures; recitations; laboratory. Noyes and Smith's *Qualitative Analysis*. (3). Dr. McCARTHY

*Prerequisite:* Chemistry 1.

\*S 5a. ELEMENTARY QUANTITATIVE ANALYSIS.—Gravimetric and volumetric methods; the stoichiometrical relations; the fundamental laws of chemistry and their applications to the study of solutions. Lectures; recitations; laboratory. Lincoln and Walton's *Exercises in Quantitative Analysis*. (5). Dr. BURGESS

*Prerequisite:* Chemistry 1, 3.

\*S 9 and 9a. ORGANIC CHEMISTRY.—The more typical and simple organic compounds; important classes of derivatives of carbon. Moore's *Outline of Organic Chemistry*; Noyes' *Organic Chemistry for the Laboratory*. (5). Dr. DERICK, Mr. KAMM

*Prerequisite:* Chemistry 2, 3.

S 9b. ORGANIC SYNTHESIS.—Continuation of S. 9a. Text: Noyes' *Organic Chemistry for the Laboratory*. (2).

Dr. DERICK, Mr. KAMM

*Prerequisite:* S 9a.

\*S 14. ORGANIC CHEMISTRY (advanced).—Lectures; recitations. Noyes' *Organic Chemistry*. (3). Dr. DERICK

*Prerequisite:* Chemistry S-9 or equivalent.

S 11 and \*S III. RESEARCH.—Inorganic, physical, organic, or analytical chemistry.

Assistant Professor BALKE, Dr. BURGESS, Dr. DERICK, Dr. McCARTHY, Dr. HOWE

(Subject to approval of Graduate School Faculty.)

\*S 13a. AGRICULTURAL ANALYSIS.—Gravimetric determination and separation of the more important constituents of soils, fertilizers, and agricultural products; chemical analysis of food stuffs, such as grains, fodders, and dairy products. Lincoln and Walton's *Elementary Exercises in Quantitative Analysis*. (5). Dr. BURGESS

S 15. PHYSIOLOGICAL CHEMISTRY.—Food nutrients, the body tissues and fluids; the urine, both normal and pathological; the processes which take place in the animal body. Lectures; demonstrations; conferences; practical work. (Open to both graduates

and undergraduates.) Hammarsten's *Text Book of Physiological Chemistry*; Hawk's *Practical Physiological Chemistry*. (5).

Dr. HOWE

*Prerequisite:* Two years' work in chemistry.

S 17. TEACHERS' COURSE.—(1). Assistant Professor BALKE

## GENERAL ENGINEERING DRAWING

Mr. PORTER

S 1. ELEMENTS OF DRAFTING.—Freehand and mechanical lettering; practice in the use of instruments on standard set of working drawing plates; tracing, machine sketching, isometric and oblique projection, and perspective. (Required of all engineering students.) Miller's *Mechanical Drafting*. (4).

Mr. PORTER

S 2. DESCRIPTIVE GEOMETRY.—Problems relating to the point, line, and plane; the properties of surfaces; intersections and developments of surfaces. Miller's *Descriptive Geometry*. (4).

Mr. PORTER

## ECONOMICS

(Including ACCOUNTANCY)

Professor ROBINSON, Mr. MARTIN, Mr. DOWRIE

S 2. PRINCIPLES OF ECONOMICS.—The general principles of economics with special reference to the experience of the United States. Seager's *Economics* (Briefer Course). (The equivalent of Economics 2.) (2½).

Mr. DOWRIE

*Prerequisite:* Two years of university credit.

S 6. BUSINESS ORGANIZATION.—The adaptation of organization to the nature of business enterprises; the characteristics and relative advantages of the individual proprietorship, partnership, and the corporation; organization for operating purposes and its effect on efficiency. (*Open only to teachers of commercial branches.* See also ACCOUNTANCY S 2.) Robinson's *Business Organization and Management*. (2½).

Professor ROBINSON

*Prerequisite:* Economics S 2 or its equivalent.

\*S 116. PRESENT DAY SOCIAL AND ECONOMIC PROBLEMS.—Trusts and the tariff; the regulation of railways and public service corporations; money, prices, and the cost of living; the rate of wages and the conditions of labor in the great industries. (For

teachers of economics, political science, history, and commerce.)  
(2½). Professor ROBINSON

## ACCOUNTANCY

S 2. PRINCIPLES OF ACCOUNTANCY.—The accounting for various types of business organization, such as the partnership, corporation, etc.; the designing of accounting systems; the treatment of bad debts, goodwill, depreciation, suspense, secret reserves, and the like. *Open to teachers of bookkeeping* and those who have had the first semester of Accountancy 1 or its equivalent. (2½).

Mr. MARTIN

## EDUCATION AND PSYCHOLOGY

Professor BAGLEY, Assistant Professor HOLLISTER, Mr. MILLER, Mr. RUGG

(Courses S 2, S 3, S 9, and S 20 are granted graduate credit.)

S 1. PRINCIPLES OF TEACHING.—The function of education; formal and informal education; fundamental principles of physical and mental development and their relation to the art of teaching; a brief survey of standard methods of instruction; the leading principles of school hygiene. (2½).

Mr. MILLER

\*S 2. EDUCATIONAL VALUES AND METHODS.—The criterion of function; classification of functions; criteria of value; an examination of the principal subjects of the school curriculum with especial reference to the relation of standard methods of organization and teaching to the principles of function and value. (2).

Professor BAGLEY

\*S 3. SCHOOL ORGANIZATION AND ADMINISTRATION.—The historical background of the American public school system; units of administration; supervision; teachers' qualifications; community adjustments; the administration of instruction. Lectures; reading; reports. (2½).

Assistant Professor HOLLISTER

S 4. HIGH SCHOOL ADMINISTRATION.—Organization and development of the American high school; comparison with secondary schools of Europe; program of studies, its underlying principles and the means of making it effective; the school as a social group. *Hollister's High School Administration*. (2½).

Assistant Professor HOLLISTER

S 6. HISTORY OF EDUCATION.—The development of educational

theory and practice in their relation to the history of civilization. Monroe's *History of Education, Brief Course*. (2½). Mr. RUGG

\*S 9. EDUCATIONAL PSYCHOLOGY.—The biological aspects of learning; the analysis of the mental processes involved in learning; the economy and technique of learning; application of methods and results to the problems of the schoolroom. Colvin's *Learning Process*. (2). Professor BAGLEY

\*S 20. THEORY OF SUPERVISION.—Typical problems in administration and teaching. (1). Professor BAGLEY

## ENGLISH

Professor CLAPP, Assistant Professor GRAY, Assistant Professor PAUL, Mr. HALLIDAY, Dr. A. J. TIEJE, Mr. R. E. TIEJE, Mr. BUCHEN

### A.—LITERATURE AND LANGUAGE

S 1a. INTRODUCTORY COURSE.—English literature to Milton. (This course with S 1b is equivalent to English 1 as described in the general Description of Courses, in Part III. The two parts may be taken in successive summers, or simultaneously.) Cunliffe's *Century Readings*. (2). Mr. R. E. TIEJE

*Prerequisite:* Three years at an approved high school.

S 1b. INTRODUCTORY COURSE.—English literature from Milton to Burns. (This course with S 1a is equivalent to English 1 as described in the general Description of Courses, in Part III.) Cunliffe's *Century Readings*. (2). Dr. A. J. TIEJE

*Prerequisite:* Three years at an approved high school.

S 16. AMERICAN LITERATURE.—Page's *Chief American Poets*. (2). Assistant Professor PAUL

*Prerequisite:* English 1 and 2 or an equivalent.

S 34. NINETEENTH CENTURY ESSAYISTS AND THE GROWTH OF THE MAGAZINES.—(2). Professor CLAPP

*Prerequisite:* Two years of college English or an equivalent.

S 15. TEACHERS' COURSE.—Outlining a course in English; typical classics used in high schools; the correcting of themes; present tendencies in English teaching. (2).

Assistant Professor PAUL

*Prerequisite:* The consent of the instructor.

\*S. 5. ELIZABETHAN DRAMA. (2). Assistant Professor GRAY

*Prerequisite:* Three years of college English or an equivalent.

- \*S 37. THE NOVEL IN THE EIGHTEENTH CENTURY. (2).

Professor CLAPP

*Prerequisite:* Three years of college English or an equivalent.

- \*S 8b. OLD ENGLISH (ANGLO-SAXON) POETRY.—*Beowulf*.—Wyatt's *Beowulf*. (3)

Dr. A. J. TIEJE

*Prerequisite:* Course 8a or an equivalent introduction to Old English.

## B.—RHETORIC

### I. *Composition*

S 1a. RHETORIC AND THEMES.—(This course is equivalent to the first semester of Rhetoric I as described in the general Description of Courses, in Part III.) Woolley's *Handbook of Composition*; Scott and Denney's *Paragraph Writing*. (3).

Mr. BUCHEN, Mr. R. E. TIEJE

*Prerequisite:* Three years at an approved high school.

S 1b. RHETORIC AND THEMES.—(This course is equivalent to the second semester of Rhetoric I as described in the general Description of Courses, in Part III.) Scott and Denney's *Paragraph Writing*. (3).

Mr. BUCHEN

*Prerequisite:* Rhetoric 1a or an equivalent.

S 3. ADVANCED COMPOSITION.—Short themes with an occasional long theme. (2).

Assistant Professor GRAY

*Prerequisite:* Rhetoric I or an equivalent.

### II. *Public Speaking*

S 7. PUBLIC SPEAKING.—Reading aloud and oral composition; lectures and individual instruction. (This course is the equivalent of the second semester of Rhetoric 7 as described in the general Description of Courses, in Part III.) (2).

Mr. HALLIDAY

*Prerequisite:* Rhetoric I and the first semester of Rhetoric 7 or an equivalent.

S 4. THE ART OF DEBATE.—Brief writing and extemporaneous presentation of arguments in formal debate. Foster's *Argumentation and Debating*. (1).

Mr. HALLIDAY

*Prerequisite:* Rhetoric 7 or an equivalent.

S 8. INTERPRETATIVE READING.—English classics selected from among those most frequently taught in the high school. (1).

*Prerequisite:* Rhetoric 7 or an equivalent.

## ENTOMOLOGY

Assistant Professor FOLSOM, Mr. GLASGOW

S 1. GENERAL FIELD AND LABORATORY COURSE.—The essential facts of entomology, emphasizing those of economic importance. Lectures; laboratory studies; field observations. (For high school teachers.) Folsom's *Entomology with Reference to Its Biological and Economic Aspects*. (2½). Assistant Professor FOLSOM

S 2. ADVANCED COURSE.—(2½). Assistant Professor FOLSOM

S 3. ECONOMIC ENTOMOLOGY.—Common injurious insects in all their stages of development; their injurious activities; approved methods of control. Lectures; laboratory; field work. (Equivalent to the economic entomology [ENTOMOLOGY 4] required of agricultural students.) (2½). Assistant Professor FOLSOM

## FRENCH

Professor OLIVER

S 1. BEGINNERS' COURSE.—Pronunciation; grammar; composition; reading of easy texts. Aldrich and Foster's *Foundations of French*; Super's *French Reader*. (4). Professor OLIVER

S 2. READING OF MODERN FRENCH.—Rapid reading of modern authors; composition; conversation. *Everyday French*, Bronson; *Colomba*, Mérimée; *Pêcheur d'Islande*, Loti; *La Mare au Diable*, George Sand; *Bataille de Dames*, Scribe et Legouvé; *Mademoiselle de la Seiglière*, Sandeau. (2). Professor OLIVER

*Prerequisite*: French I, or the equivalent.

S 4. ADVANCED COMPOSITION AND CONVERSATION.—(1).

Professor OLIVER

*Prerequisite*: Two years' university work in French, or the equivalent.

S 125. SEMINAR.—Graduate work in the Romance languages.

Professor OLIVER

## GERMAN

Professor HANDSCHIN, Mr. BARTO, Mr. HELD, Mr. TODD

S 1. BEGINNERS' COURSE.—(4).

Professor HANDSCHIN, Mr. HELD

S 2. INTERMEDIATE COURSE. (3).

Mr. BARTO

*Prerequisite*: German I, or the equivalent.



S 3. PROSE READING.—Reading of narrative prose; sight translation; composition. (3). Mr. TODD

*Prerequisite:* German 3, or the equivalent.

S 4. READINGS FROM THE CLASSICS.—Lessing's *Minna von Barnhelm*, Schiller's *Jungfrau von Orleans*. (3). Mr. BARTO

*Prerequisite:* German 4, or the equivalent.

NOTE: Students securing a grade of 85 or more and doing additional work assigned by the instructor may supplement the work of S 2, S 3, or S 4, making them equivalent to courses 3, 4, or 5 respectively, the additional credit to be indicated at registration.

S 5. PROSE COMPOSITION.—Translation of ordinary prose into German; study of idiomatic constructions; practice in free composition in German. (2). Mr. HELD

*Prerequisite:* Two years' university work in German, or the equivalent.

S 6. MODERN FICTION.—Reading of modern authors, such as Keller, Meyer, and Storm. (2). Mr. TODD

*Prerequisite:* Two years' university work in German, or the equivalent.

S 9. TEACHERS' COURSE.—Place, aim, and scope of the study of German in the high school; discussion of methods and the chief difficulties in teaching German. Observation work in the beginners' course. (1). Professor HANDSCHIN

*Prerequisite:* Experience in teaching German, or three years' university work in German, or the equivalent.

S 11. GOETHE'S FAUST.—Critical reading of the first part of *Faust*. (1½). Professor HANDSCHIN

*Prerequisite:* Three years' university work in German, or the equivalent.

## HISTORY

Professor FORD, Professor McCORMAC

S 1a. MEDIEVAL EUROPEAN HISTORY TO 1300.—Introductory course corresponding, for the period covered, to History 1. (The course offered in 1913 will probably cover the period from 1300 to 1648.) (2½). Professor FORD

S 3b. AMERICAN HISTORY, 1783-1860.—A part of the usual introductory course in American history. (The course offered in

1913 will probably cover the recent history of the United States.)  
(2½). Professor McCORMAC

S 13. THE RISE OF THE AMERICAN REPUBLIC.—The colonies in the eighteenth century and their development into the American nation; particular attention to the years following 1748.

Professor McCORMAC

*Prerequisite:* History 3.

(For advanced work in European history see Political Science S2.)

## LATIN

Professor BARTON, Associate Professor OLDFATHER

S 1. TERENCE.—The language, verse, and dramatic technique of two plays of Terence. (2). Associate Professor OLDFATHER

S 2. SATIRE.—A large part of the Satires of Horace; selections from Juvenal. Lectures on the history of satire and connected problems in Latin literature. (1½).

Associate Professor OLDFATHER

S 106. INTRODUCTION TO LATIN COMEDY.—Lectures; interpretations; assigned readings. (1½). Associate Professor OLDFATHER

S 3. TEACHERS' COURSE.—The position of Latin in the school program; methods of instruction; the essentials of Latin instruction in the high school; books and equipment. (1½).

Professor BARTON

## LIBRARY SCIENCE

Miss CURTIS, Miss ARMSTRONG, Miss ABEL

NOTE:—The courses indicated covered six weeks and received no university credit. Only people employed in libraries were admitted.

S 1. CLASSIFICATION; CATALOGING; BOOK NUMBERS.—*Five times a week.*

S 2. REFERENCE WORK.—The selection and use of reference books suited to the small public library. *Twice a week.*

S 3. SELECTION OF BOOKS.—Principles of book selection and lectures on subject bibliography. *Twice a week.*

S 4. WORK WITH CHILDREN.—Selection and discussion of children's books; administration of children's libraries; classification and cataloging. *Twice a week.*

S 5. ORDER AND ACCESSION; LOAN DEPARTMENT; BINDING AND REPAIR. *Twice a week.*

S 6. LIBRARY ADMINISTRATION AND EXTENSION. *Twice a week.*

### MANUAL TRAINING

Mr. PARK, Mr. DUNCAN

(See also ART AND DESIGN, GENERAL ENGINEERING DRAWING, and MECHANICAL ENGINEERING.)

S 1. SHOP ADMINISTRATION.—History and theory of industrial education; typical schools and systems of manual training leading to a better understanding of the aims and methods employed for the promotion of industrial education; organization of work; equipments and materials. ( $2\frac{1}{2}$ ). Mr. PARK

S 2. WOODWORKING.—(A course for teachers in the 7th and 8th Grades and high schools.) Tools—uses, names of parts, adjustments, care, how to sharpen; the making of important joints used in wood construction; the designing and making of arts and crafts furniture; notebook work, covering talks, papers, problems; work at the bench. (3). Mr. PARK, Mr. DUNCAN

### MATHEMATICS

Assistant Professor EMCH, Dr. WAHLIN, Mr. CARSCALLEN, Mr. BARNHART, Dr. DENTON

S 2. ADVANCED ALGEBRA.—(Equivalent to Mathematics 2.) Algebraic reductions; variables and functions; equations; inequalities; mathematical induction; variation; progressions; complex numbers; limits; infinite series; undetermined coefficients. (Theory of equations given with Math. S6.) Rietz and Crathorne's *College Algebra*. (3). Dr. WAHLIN

S 4. PLANE TRIGONOMETRY.—(Equivalent to Mathematics 4.) Rothrock's *Elements of Plane and Spherical Trigonometry*. (2).

Assistant Professor EMCH

S 6. ANALYTICAL GEOMETRY.—(Equivalent to Mathematics 6.) Plane and solid analytic geometry; theory of equations; graphs. Rigg's *Analytic Geometry*. (5). Mr. BARNHART

S 7. DIFFERENTIAL CALCULUS.—(Equivalent to Mathematics 7.) Townsend and Goodenough's *Essentials of Calculus*. (5)

Dr. DENTON

S 9. INTEGRAL CALCULUS.—(Equivalent to Mathematics 9.)  
Townsend and Goodenough's *Essentials of Calculus*. Two sections.  
(3). Mr. CARSCALLEN

\*S 16. DIFFERENTIAL EQUATIONS.—(Equivalent to Mathematics  
16.) General linear equations with constant coefficients; special  
forms of differential equations of higher order; integration in  
series. (3). Dr. WAHLIN

\*S 27. PROJECTIVE GEOMETRY.—(Equivalent to Mathematics  
27.) Fundamental concepts; anharmonic ratio; projective pencils  
and ranges; projective transformation and groups; conics and  
quadric surfaces; pencils and ranges of conics; quadratic trans-  
formations and projective theory of cubes; applications in mechanics.  
(3). Assistant Professor EMCH

## MECHANICAL ENGINEERING

(See also MANUAL TRAINING.)

Mr. DUNCAN, Mr. SCROGGIN

S 1. PATTERN-SHOP.—The care and use of tools; the construc-  
tion of patterns, core-boxes, and the use of machines such as are  
found in modern pattern-shops. Mr. DUNCAN

S 3. MACHINE-SHOP.—Chipping and filing; elementary work  
on lathe, drill press, shaper, planer, and grinding machine. (2½).  
Mr. SCROGGIN

S 4. ADVANCED MACHINE-SHOP.—The use of milling machine,  
screw machine, gear cutter, boring mill, and turret lathe; erecting  
and testing machines and gas engines. (2½). Mr. SCROGGIN

NOTE: Lectures on tools and shop processes are given fre-  
quently, and inspection trips to shops in the local and adjoining  
towns are made in connection with all classes in shop practice. A  
student may finish one full year's work in the shop during the  
summer term.

## MECHANICS, THEORETICAL AND APPLIED

Mr. NOERENBERG, Mr. ENSIGN, Mr. FARWELL

S 7. ANALYTICAL MECHANICS—The first half of Analytical  
Mechanics as given in Maurer's *Technical Mechanics*. *Daily*; (3).  
Mr. NOERENBERG

*Prerequisite*: Mathematics 7; registration in Mathematics 9.

S 8. ANALYTICAL MECHANICS.—The second half of Analytical Mechanics as given in Maurer's *Technical Mechanics*. *Daily*; (2½).

Mr. ENSIGN

*Prerequisite*: Mathematics 9; T. and A. M. 7.

S 9. RESISTANCE OF MATERIALS.—Elementary mechanics of materials; experiments and investigations in the materials laboratory; problems in ordinary engineering practice. (Equivalent to T. and A. M. 9.) Merriman's *Mechanics of Materials*. *Five one-hour and two two-hour periods a week*; (3½). Mr. ENSIGN, Mr. FARWELL

*Prerequisite*: T. and A. M. 7; registration in T. and A. M. 8.

S 10. HYDRAULICS.—The pressure and the flow of water and its utilization as motive power; the observation and measurement of pressure, velocity, and flow; power and efficiency; the determination of experimental coefficients. Recitations; laboratory. Text: *Hoskin's Hydraulics*. *Four one-hour and two two-hour periods a week*; (3). Mr. FARWELL

*Prerequisite*: T. and A. M. 8.

NOTE: With the opening of the hydraulic laboratory for the Summer Session, arrangements may be made to use its facilities for special experimental work.

S 14. ELEMENTS OF MECHANICS.—The principles of kinematics, kinetics, and statics, and their application. Morley's *Mechanics for Engineers*. (For architects and others who have not taken the calculus.) (4). Mr. NOERENBERG

*Prerequisite*: Mathematics 2, 4.

## MUSIC

Professor MILLS

S 1. THEORY OF MUSIC.—Eartraining, intervals, triads, chords of the seventh and ninth, and harmonization of melodies by means of the principal triads. Original melody writing. Professor MILLS

S 2. HISTORY OF MUSIC.—From the Christian era to the present time. Professor MILLS

S 3. MUSICAL FORM, ANALYSIS, AND APPRECIATION.

Professor MILLS

S 4. ADVANCED HARMONY AND COUNTERPOINT.—Modulation; chromatic chords; elements of counterpoint. Professor MILLS

S 5. CHORUS.—

Professor MILLS

## PHYSICAL TRAINING FOR MEN

Director HANA

- S 1. GYMNASIUM EXERCISE.—Calisthentic drills and elementary heavy apparatus work. Mr. HANA
- S 2. GYMNASIUM PRACTICE.—Advanced heavy apparatus work.
- S 3. SWIMMING. Mr. HANA

## PHYSICAL TRAINING FOR WOMEN

Miss BROOKS

- S 1. PRACTICE IN FREE GYMNASTICS, LIGHT APPARATUS, FOLK AND GYMNASIUM DANCING, TENNIS, AND OTHER GAMES. Miss BROOKS
- S 2. SWIMMING. Miss BROOKS

## PHYSICS

Assistant Professor KNIPP, Assistant Professor SCHULZ, Mr. SMITH,  
Mr. JONES, Mr. ANDERSON

- S 2a. GENERAL PHYSICS.—Wave motion, sound, and light. Lectures; experimental demonstrations; recitations. (1½).

Assistant Professor SCHULZ, Mr. ANDERSON

*Prerequisites:* Plane geometry; high school algebra; plane trigonometry desired.

- S 2b. INTRODUCTORY LABORATORY PHYSICS.—(Laboratory course in wave motion, sound, and light, to accompany S 2a.) Schulz's *Laboratory Manual*. (1½).

Assistant Professor SCHULZ, Mr. JONES

*Prerequisite:* Same as for S 2a.

- S 15. ELECTRICITY AND MAGNETISM.—Laboratory; discussions; recitations. Cahart and Patterson's *Electricity and Magnetism*. (1½).

Mr. SMITH

*Prerequisite:* A course in general physics.

- S 18. TEACHERS' COURSE.—Practical problems involved in teaching elementary physics; methods of conducting lectures and laboratory work with special reference to physical manipulation. Notes by Assistant Professor F. R. Watson. (1½).

Mr. SMITH

*Prerequisite:* A course in general physics, or teaching experience in physics.

- S 20b. LIGHT.—Spectroscopy. Laboratory; lectures on the theory and use of prism, grating, and echelon spectroscopes, and

interferometers. References:—Baly's *Spectroscopy* and Wood's *Physical Optics*. Assistant Professor SCHULZ

*Prerequisite:* Consult instructor.

S 4. ADVANCED ELECTRICAL AND MAGNETIC MEASUREMENTS.—Laboratory; lectures; assigned reading; reports. Carhart and Patterson's *Electricity and Magnetism*. (1½). Mr. SMITH

*Prerequisites:* A course in general physics and calculus.

S 21a. ELECTRICAL DISCHARGE IN VACUUM TUBES.—Experimental lectures; assigned reading; reports. References:—McClung's *Conduction of Electricity Through Gases*. (1)

Assistant Professor KNIPP, Mr. ANDERSON

*Prerequisite:* A course in general physics.

S 21b. CONDUCTION OF ELECTRICITY THROUGH GASES.—Advanced laboratory; a number of the more classical experiments, including a determination of  $v$  and  $e/m$  of the various carriers of electricity. References:—Thomson's *Conduction of Electricity Through Gases*, and current literature. (1).

Assistant Professor KNIPP, Mr. ANDERSON

*Prerequisites:* A course in general physics and calculus.

S 131. INVESTIGATION OF SPECIAL PROBLEMS.—Advanced laboratory; special problems. (1 or 2).

Assistant Professors KNIPP and SCHULZ

S 133. SEMINAR AND THESIS.—*Once or twice a week*.

Assistant Professors KNIPP and SCHULZ

## PHYSIOGRAPHY

Mr. DECKER

S 1. COURSE FOR TEACHERS.—The most common topographic forms met with in the Mississippi Valley and in other sections in the United States; the processes which have brought them into existence; and their effect on the life which they environ. Lectures; laboratory; field trips. (Laboratory fee \$1.) (4). Mr. DECKER

S 2. ADVANCED PHYSIOGRAPHY.—Selected physiographic areas and their life relations; the local environment as the initial problem. Lectures; laboratory; field trips. (Laboratory fee \$1.) (2½).

Mr. DECKER

## POLITICAL SCIENCE

Professor GEISER

S 1. AMERICAN NATIONAL GOVERNMENT.—The national govern-

ment of the United States: its origin, development, and structure; relations between the national and state governments. (For teachers of history and civics.) (2½). Professor GEISER

\*S 2. MODERN EUROPEAN GOVERNMENTS.—The governments of western Europe, with special attention to France and Germany; the national political systems of France, Germany, Switzerland, and Belgium. Lectures; assigned readings; reports. (For advanced undergraduates and graduate students.) (2½). Professor GEISER

## RHETORIC

(See ENGLISH.)

## SOCIOLOGY

Professor HAYES

S 1. PRINCIPLES OF SOCIOLOGY AND THEIR APPLICATION TO LIVING PROBLEMS.—(2½) Professor HAYES

S 3. SOCIAL EVOLUTION.—The customs, practices, and ideas of different peoples, savage, barbarous, and civilized, to reveal the method of progress. (2½). Professor HAYES

## ZOOLOGY

Professor WARD, Mr. COUTANT, Mr. CORT

S 1. ELEMENTARY GENERAL ZOOLOGY.—General morphology, physiology, ecology, economic relations, suited to the needs of the general student and of teachers in secondary schools. (Laboratory fee, \$2.00.) (4). Professor WARD, Mr. CORT

S 21. INTRODUCTION TO ZOOLOGICAL RESEARCH.—Investigation of topics, usually repeating the work of earlier investigators; the morphology, life history, or reciprocal relations of invertebrate forms. Laboratory; conferences; assigned reading. (Laboratory fee, \$2.00). (2 to 5). Professor WARD

S 27. MICROSCOPICAL TECHNIQUE.—Approved methods of preserving and mounting animals for microscopical study; talks and discussions; the choice of methods which can be used to advantage in laboratories with only a moderate equipment; practice in narcotization, killing, fixing, hardening, clearing, infiltrating, embedding in paraffine or celloidin, sectioning, and staining; methods for making both temporary and permanent preparations. Laboratory. (Laboratory fee, \$2.00.) (2½). Mr. COUTANT



# THE COLLEGE OF LAW

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## AIM OF THE COLLEGE

It is the aim of the College to furnish its students with such a training as will best fit them for the practice of the law. A mere knowledge of what the law is will not suffice. The student must learn the reasons which have made it what it is. These can be mastered only by studying the law in the light of its historical development. No special course is offered on the history of the law; but it is sought to present each subject so that the principles peculiar to it may be historically understood. It is also the aim of the College that the courses shall be so presented as to familiarize the student with legal methods of reasoning and to equip him with legal habits of thought. It is believed that the case method of instruction, properly understood and applied, is best adapted to accomplish these objects.

## ADMISSION

*With the exception of special students as defined below*, applicants for admission to the College of Law must have obtained credits for one year's work in another college of this University or of some other institution of recognized standing; provided, however, that an applicant who lacks not more than four semester hours of such credit may be admitted on condition of making up the deficiency before beginning the second year of law study.

## SUGGESTED PREPARATORY COURSES

Below is given a schedule of studies recommended by the faculty of the College of Law for students taking one year in the College of Literature and Arts to meet the requirement for admission to the College of Law. In addition a schedule of studies covering two years in the Literature and Arts course is added for the guidance of those who may be able to take two years of pre-legal work.

**One-Year Course in Preparation for Law**

FIRST SEMESTER		SECOND SEMESTER	
	Hours		Hours
Military 2.....	1	Military 1 & 2.....	2
Phys. Training 1 & 1a.....	1	Physical Training .....	1
Rhetoric 1.....	3	Rhetoric .....	3
Foreign language .....	4	Foreign language.....	4
History 1.....	4	History 11.....	3
Mathematics 2.....	3	English 1.....	4
	<hr/> 16		<hr/> 17

The courses in military and physical training, Rhetoric I, and eight hours in foreign language are required of all freshmen in the College of Literature and Arts. Latin is strongly urged for all students intending to study law; but those who have not had the necessary preparation for college courses in Latin should substitute a modern language, preferably French or German.

**Two-Year Course in Preparation for Law**

Students who are able to give two years to preparatory work are recommended to take the schedule given below.

FIRST SEMESTER		SECOND SEMESTER	
	Hours		Hours
Military 2.....	1	Military 1 & 2.....	2
Phys. Training 1 & 1a.....	1	Physical Training 1.....	1
Rhetoric 1.....	3	Rhetoric 1.....	3
Foreign language.....	4	Foreign language.....	4
Economics 1.....	3	History 11.....	3
Mathematics 2 & 4.....	5	English 1.....	4
	<hr/> 17		<hr/> 17

SECOND YEAR			
Military 2.....	1	Military 2.....	1
Science or foreign language.....	5 or 4	Science or language.....	3 or 4
Political Science 1.....	3	Political Science 3.....	3
Economics 1.....	5	Economics 3.....	3
History 3.....	3	Philosophy 1.....	3
	<hr/> 16 or 17	History 3.....	3
			<hr/> 16 or 17

**COMBINED COURSE IN LITERATURE AND ARTS  
AND LAW**

By the proper selection of his studies it is possible for a prospective law student to take both the degree in arts and the degree in law in six years. (See page 144.)

### SPECIAL STUDENTS

Students twenty-one years of age, or over, who are not able to satisfy the regular requirements for admission, but who have had a preliminary education which would entitle them to take the Illinois State Bar Examination, may, by permission of the faculty, be admitted without examination as special students, but no such student may be a candidate for a degree. In exceptional cases, other persons may, by permission of the faculty, be admitted as special students.

No one may continue as a special student for more than two years except by special permission of the faculty, application for which should be made through the Dean.

### ADVANCED STANDING

After matriculating, an applicant may obtain advanced standing (1) by transfer of credits from another accredited law school upon presentation of a certificate of honorable dismissal and a certified record of work done; or (2) by examination taken at the time of entrance to the College of Law in first year subjects only.

### INSTRUCTION

Courses in substantive law are taught by analyzing and comparing cases which have been carefully selected and arranged in case books. References, however, are constantly made to leading text books, and they are recommended and in certain courses required for collateral reading.

Courses in the law of procedure are taught from the leading text books, supplemented by the examination of statutes and adjudged cases, and students are brought into as close touch as possible with actual practice, both by the method of instruction in these courses and by means of the Moot Court.

The instruction gives a thorough training in the common law, which constitutes a proper foundation for the practice of law in any state.

The faculty of the College is impressed with the idea that a state university should teach the law of the state which supports the school, and to that end, without neglecting the general principles that lie at the foundation of the common law, especial attention is given in all courses to grounding the student thoroughly in the law as

determined by the courts of Illinois. Throughout the entire course, the students are required to consult frequently Illinois decisions and statutes, which are made the basis of discussion in class by students and instructor. In the Moot Court and through the course in Illinois procedure, especial attention is paid to the rules of pleading and practice that obtain in the State of Illinois.

### MOOT COURT

The sessions of the Moot Court are held every Monday afternoon of the first semester for the third year class; every Tuesday afternoon of the first semester for the second year class; and every Monday afternoon of the second semester for the second and third year classes together. The Court is presided over by the Dean, who has had an experience of twenty-five years as a judge of the Circuit and Appellate Courts of Illinois. Attendance is compulsory with second and third year classes. It is the purpose to have the workings of the Moot Court parallel proceedings in the various courts of the State. Students are trained in the preparation of legal documents and in the trial of cases, both civil and criminal.

The Moot Court Bulletin is published every other week of the college year, and in this are printed the statements of cases, the briefs of opposing counsel, and the opinions of the presiding judge.

### SPECIAL LECTURES

Addresses by prominent members of the bench and bar on practical features of the law are given from time to time during the year.

In 1911-12 two courses of lectures were given by the following: Nathan William MacChesney, A.B., LL.B., of the Chicago Bar  
B. M. Chipfield, of the Illinois Bar

### THE LAW LIBRARY

The Law Library contains 14,000 volumes, including all the reports of the courts of last resort of all the states; the United States Supreme, Circuit, and District Court reports; the English reports; the statutes of the various states; digests of the state reports; several sets of special reports, such as the American Reports, American State Reports, American Decisions, and Lawyers' Reports Annotated; all the great Encyclopedias and Digests; and a carefully selected collection of text books and legal periodicals.

The library is growing rapidly, new sets of reports and new

digests, text books, and periodicals being continually added, together with the continuations of the reports and periodicals already in the library.

## REQUIREMENTS FOR GRADUATION AND DEGREES

The degree of Bachelor of Laws will be granted to all regularly matriculated students who complete all the courses in the first year list; courses 8, 10, 11, 12, 18, 20, 26 (second year); courses 4a, 15, 17, 19, 21, 22, 26 (third year); and enough of the other courses offered to make 84 hours of credit.

### DEGREE OF DOCTOR OF LAW

The degree of Doctor of Law (J. D.) will be granted to students who comply with the following conditions:

1. Complete the work required for the degree of Bachelor of Laws.
2. Secure a bachelor's degree in arts or science at least two academic years prior to the completion of the course for the degree of Bachelor of Laws.
3. Obtain a minimum average grade of 85 in the College of Law.
4. Present a thesis approved by the faculty of the College of Law, in accordance with the requirement hereinafter set out.

Students who receive the A.B. degree after registering in the College of Law, and, by counting courses in law toward both the degree of A.B. and the degree of LL.B., take both degrees in six years, must during the first year in the College of Law take four hours in history or the social sciences.

### *Rules concerning Theses*

The following are the rules concerning theses presented for the degree of Doctor of Law: 1. The thesis must be on a subject approved by the Dean of the College of Law after consultation with him as to the proposed method of treatment. 2. The subject of the thesis must be filed with the Secretary on or before December 20. 3. The thesis must be typewritten on paper 8½x11 inches, with at least one inch margin at the top, bottom, and sides. 4. It should contain not less than 4,000 nor more than 10,000 words. 5. In citing cases, names of parties, volume, page, and year should be given. Citations are not to be counted in determining the number of words. The student is expected to exhaust the cases decided during the period covered by his thesis, and to state the period for

which the cases have been examined. 6. The thesis must be delivered to the Secretary of the faculty not later than May 1.

The thesis may then be returned to the writer for revision, or if unsatisfactory, it may be rejected altogether. If returned for revision it may be rejected after being revised. If accepted it will be filed in the Law Library, and may be published by the College of Law or by the University.

#### CERTIFICATE FOR ADMISSION TO THE ILLINOIS STATE BAR EXAMINATION

Any student, although not a candidate for a law degree, is, if he has taken the following courses: 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 18, 20, 26 (2nd and 3rd year), 4a, 15, 17, 19, 21, and 22, entitled to a certificate thereof from the University, which certificate satisfies the requirements as to legal studies of RULE 39 of the Supreme Court of the State of Illinois, relative to admission to the bar.

*As to other requirements for admission to the bar in the State of Illinois, see RULE 39, in volume 204 of the Illinois Reports, at page 20.*

#### COURSE LEADING TO THE DEGREE OF LL.B.

##### FIRST YEAR

FIRST SEMESTER: Contracts (Law 1); Torts (Law 2); Criminal Law (Law 5); Personal Property (Law 6).

SECOND SEMESTER: Contracts (Law 1); Torts (Law 2); Real Property (Law 3); Common Law Pleading (Law 4); Domestic Relations (Law 7).

##### SECOND YEAR

FIRST SEMESTER: Evidence (Law 8); Real Property (Law 10); Agency (Law 11); Equity (Law 12); Damages (Law 13); Moot Court (Law 26); Conveyancing (Law 29); Public International Law (Law 30).

SECOND SEMESTER: Evidence (Law 8); Equity (Law 12); Wills (Law 18); Equity Pleading (Law 20); Moot Court (Law 26); Sales (Law 9); Carriers (Law 14); Future Interests in Property (Law 27); Insurance (Law 28); Quasi-Contracts (Law 32); Public Service Companies (Law 34).

##### THIRD YEAR

FIRST SEMESTER: Illinois Procedure (Law 4a); Bills and Notes

(Law 15); Private Corporations (Law 17); Partnership (Law 19); Constitutional Law (a) (Law 22); Moot Court (Law 26); Municipal Corporations (Law 24).

SECOND SEMESTER: Private Corporations (Law 17); Suretyship (Law 21); Constitutional Law (b) (Law 33); Moot Court (Law 26); Mortgages and the Recording Acts (Law 23); Bankruptcy (Law 25); Conflict of Laws (Law 31).

### PRIVILEGES OF STUDENTS

The students of the College of Law may take, without extra fee, courses of study in other departments of the University, provided they secure the approval of the Dean of the College of Law. Especial attention is called to the courses in public speaking and debate, and to the courses in history, economics, and political science in the College of Literature and Arts and the Graduate School.

Law students are entitled to library privileges in the general library as well as in the law library, and possess in general all the rights and privileges enjoyed by other students of the University.

### LAW CLUBS

The law students have organized voluntary associations for the discussion of interesting and important questions of law, and for the trial of hypothetical cases of their own choice. Four of these societies are active at present. They are known as the Van Twiller, Witenagemot, John Marshall, and Fuller club courts.

### SCHOLARSHIP PRIZES

Eight scholarship prizes are open to matriculated students of the first and second years, to be awarded at the end of each year, four of \$50 each and four of \$25 each.

# THE SCHOOL OF PHARMACY

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For the faculty of the School of Pharmacy, see page 42.

## HISTORY

The School of Pharmacy was originally the Chicago College of Pharmacy and was incorporated under that name September 5, 1859. Prior to that time there were but three schools of pharmacy in the country, and these were located in the eastern states.

While the primary object of the institution was to provide instruction in the science and art of pharmacy, other functions were developed. Thus, a code of ethics was early adopted by the members; successful efforts were made to bring about better relations between pharmacists and physicians; the pioneer pharmaceutical library was established; and for eighteen years beginning with 1868 a monthly journal, *The Pharmacist*—the first of its kind in the West—was published.

In October, 1859, the first course of lectures was instituted, occupying three evenings a week for a period of six months. Of the first class, but two students were graduated in 1861. The war caused a suspension of the teaching, and the school was not reopened until 1870. The great fire of 1871 destroyed the equipment, but pharmacists throughout Europe and America extended help to the institution, furnishing a library and an outfit of apparatus, which became the nucleus of the present equipment. In 1872 the instruction was resumed for the second time and has since continued without interruption.

In 1880 the members and graduates of the College took an active part in the formation of the Illinois Pharmaceutical Association, which in the following year secured the passage of the pharmacy law.

The twenty-fifth anniversary of the founding of the College was signalized by the removal of the College to a larger building at 465



State street. Up to this time instruction had been given mainly by means of lectures, laboratory work being entirely optional. Laboratory courses in pharmacy, chemistry, and vegetable histology were now made obligatory. A laboratory devoted entirely to prescription compounding was established in 1892.

The College was formally united with the University May 1, 1896, becoming the technical School of Pharmacy of the University of Illinois. In the management of the School, the trustees and officers have the assistance of an advisory board of pharmacists, elected by the registered pharmacists of the State through the Illinois Pharmaceutical Association.

### LOCATION

The School of Pharmacy occupies the four upper floors in a building located at Michigan Boulevard and Twelfth Street. The building is a substantial brick structure, five stories in height, with a frontage of fifty feet on Michigan Avenue and one hundred seventy feet on Twelfth Street.

A half block east of the building is the Illinois Central Depot; and one block west are the Cottage Grove Avenue, Indiana Avenue, and Twelfth Street surface lines, and the Twelfth Street Station of the South Side Elevated Railroad.

On Michigan Avenue, immediately south of the School, are to be found some of the best low-priced boarding and rooming places in the city. Satisfactory accommodations may be readily secured within a short distance of the School.

### EQUIPMENT

The east end of the building is occupied by lecture halls, of which there are three, arranged one above the other and having a seating capacity of from one hundred fifty to three hundred persons.

The laboratories are six in number, including one each for qualitative analysis, quantitative analysis, special work in chemistry, microscopy, manufacturing pharmacy, and dispensing. The total capacity of these laboratories is sufficient for the accommodation of 348 students, working at one time.

The laboratories are supplied with compound microscopes, analytical balances, and special apparatus, and with collections of crude drugs, medicinal plants, chemicals, and pharmaceutical products.

The library contains about two thousand volumes, including, in

addition to the usual works of reference, many rare books. Complete files of the leading pharmaceutical journals are an important feature.

## COURSES OF INSTRUCTION

### FOR THE DEGREE OF GRADUATE IN PHARMACY

In the course leading to the degree of Graduate in Pharmacy the instruction is so arranged as to require the attendance of each student on three days each week and from twenty to twenty-one hours weekly during two annual sessions of thirty weeks each. This arrangement is advantageous to drug clerks who desire to spend a part of their time in drug stores while attending school, thereby adding to their practical experience and at the same time earning a part or all of their living expenses.

The subjects taught are chemistry, general, pharmaceutical, and analytical; pharmacy, theoretical, manufacturing, and dispensing; botany; physiology; and materia medica.

### FOR THE DEGREE OF PHARMACEUTICAL CHEMIST

To meet the demand for special training on the part of students who desire to pursue more extended courses in pharmaceutical chemistry, applied chemistry, and bacteriology, or to prepare themselves for positions under the Food and Drugs Act, this School offers a course leading to the degree of Pharmaceutical Chemist. It comprises two annual sessions of thirty-six weeks each, with instruction on five days each week, amounting to about thirty-three hours weekly, or a total of 2,300 hours in the entire course.

This course is partially concurrent with the shorter course and includes all the didactic instruction given in the latter. It consists largely of laboratory practice. In addition to the subjects mentioned above it embraces organic analysis and proximate assays, new remedies, analysis of urine, food and sanitary analysis, bacteriology, and applied microscopy.

The system of teaching includes lectures, illustrations, demonstrations, recitations, written and oral examinations, and individual practice and personal instruction in the various laboratories, much time being devoted to this important part of the student's work.

## ADMISSION

The regular session opens September 22, 1913. The shorter

course ends April 30, 1914; the longer course closes June 12, 1914.

Applicants for admission to the course leading to the degree of Pharmaceutical Chemist must be at least seventeen years of age and must be graduates of accredited high schools or furnish evidence of a preliminary education equivalent thereto.

Applicants for admission to the course leading to the degree of Graduate in Pharmacy must be at least seventeen years of age and must have completed one year of high school work or its full educational equivalent.

The entrance requirements of this school are those adopted by the American Conference of Pharmaceutical Faculties, of which this school is a member.

Students who have pursued courses of study in other colleges of pharmacy will be given credit for such portions of their work as are equivalent to the work required by this college.

### GRADUATION

In conformity with the usual custom of pharmaceutical schools, drug store experience is not made a requirement for the degree of Pharmaceutical Chemist. Students who have satisfactorily completed the course will be awarded the degree upon the recommendation of the faculty.

For the degree of Graduate in Pharmacy this School has always required practical drug store experience. The actual time of attendance at the School, amounting to fourteen months, is credited as part of the four years of practical experience required for the degree. Candidates must have attained the age of twenty-one years and have satisfactorily finished the work leading to the degree. Students who have successfully met the scholarship requirement, but are lacking in age or in practical experience, will receive a certificate and will be awarded the diploma when the requirements of age and experience are satisfied.

Persons competent to fulfill the general requirements of admission to the University may be granted credits upon other University courses for equivalent work completed at the School of Pharmacy.

### STATE REGISTRATION

To become a registered pharmacist in Illinois, it is necessary to pass an examination before the State Board of Pharmacy, no diplomas being recognized.

The diploma of this School is, however, accepted in lieu of examination for registration in about ten states and territories; and in several other states, including New York and Pennsylvania, where graduation prerequisite laws are in force, this School is among the schools recognized, and its diploma admits to the examination.

The amendments to the Illinois Pharmacy Law, in effect July 1, 1907, give credit, as a part of the "practical experience in compounding drugs" required by the law, for the actual time of attendance at a recognized school of pharmacy but not to exceed two years for registered pharmacist or one year for registered assistant pharmacist.

### FEES AND EXPENSES

For a statement of the fees, see page 124. Fees are payable in advance. Students unable to meet this requirement must make satisfactory arrangements with the Actuary at the beginning of the course.

**BOARD AND LODGING.**—Good board and lodging, within a short distance of the School, can be had for from four to six dollars per week. This expense may be somewhat reduced by two or more students rooming together. The Actuary keeps a list of suitable boarding and rooming places, with their rates.

**SELECTION OF SEATS.**—Seats in the lecture halls and desks in the laboratories will be assigned to students by the Actuary, in the order of enrollment. To enroll, junior students will fill out the matriculation blank and forward it to the Actuary, together with credentials for admission and the matriculation fee of five dollars; senior students will make a payment on tuition account of five dollars. It is of advantage to students to matriculate early.

**OPPORTUNITIES FOR EMPLOYMENT.**—The Actuary keeps a register of students desiring employment and of pharmacists wishing to employ students. Students desiring employment are invited to correspond with him.

### FURTHER INFORMATION

Further information may be found in the special announcement of this school, which may be obtained from the ACTUARY, SCHOOL OF PHARMACY, Michigan Avenue and Twelfth Street, Chicago, or the REGISTRAR, University of Illinois, Urbana.

PART III  
DESCRIPTION OF COURSES



# DESCRIPTION OF COURSES

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## EXPLANATION

The arrangement of subjects in the following Description of Courses is alphabetical. The connections of allied departments are indicated by cross references.

Following the description of each course of instruction will be found the requirements, if any, for admission to that particular course. The sequence indicated by these prerequisites must be followed. For instance, under Art and Design 5, Painting, the prerequisites given are Art and Design 1, 2, and 3. These three courses must be completed before Course 5 may be taken.

If a course not required for graduation is selected by fewer than five students it may be withdrawn for the semester.

Graduate courses are numbered upward from 100.

Credit is reckoned in *semester hours*, or simply *hours*. An *hour* is one class period a week for one semester, or the equivalent in laboratory, shop, or drawing room. Graduate work is not recorded in credit hours, nor do the credit hours of undergraduate courses apply to graduate students enrolled in them.

The semester, and the number of *hours* each semester for which the course counts, are shown after each course, thus: *I, II; (2)*. The Roman figures indicate semesters; the Arabic numerals in parenthesis indicate *hours* of credit for *each semester* for undergraduates. The omission of a course for the current year is indicated by enclosing the entire description of such a course in brackets.

## ACCOUNTANCY (See ECONOMICS.)

### AGRICULTURAL EXTENSION

FRED HENRY RANKIN, *Superintendent and Assistant to the Dean,  
with rank of Assistant Professor*

ARETAS WILBUR NOLAN, M.S., *Assistant Professor*

FRANCIS MARION SIMPSON, B.S., *Assistant*

AUGUSTA DILLMAN EVANS, A.B., *Assistant*

JAMES VAIL STEVENSON, A.B., *Assistant*

1. PRINCIPLES AND METHODS OF HIGH SCHOOL AGRICULTURE.—Features of agricultural science and practice best adapted to high school conditions; the best order and methods for their presentation; suiting course and instruction to the needs of the school community; what laboratory work shall be given; what apparatus may be used; what field work is practical. Practice teaching provided through coöperation with the local high school. *II*; (5).

Assistant Professor NOLAN

*Prerequisite:* Two years' work in agriculture.

3. AGRICULTURAL EXTENSION TEACHINGS.—Extension enterprises and the way in which they may be of service to the people; farmers' institutes; agricultural extension schools; farmers' clubs and co-operative work in rural communities. *II*; (1).

Assistant Professor RANKIN

*Prerequisite:* Agricultural Extension 4.

4. COUNTRY LIFE PROBLEMS.—Problems of the farm; duties of citizenship; social, economic, and educational work in rural communities. Lectures. Required of all first-year students. *I, II*; ( $\frac{1}{2}$ ).

Professor DAVENPORT and other members of the faculty

### AGRICULTURE

(See AGRICULTURAL EXTENSION, AGRONOMY, ANIMAL HUSBANDRY, DAIRY HUSBANDRY, HORTICULTURE, and VETERINARY SCIENCE.)

### AGRONOMY

CYRIL GEORGE HOPKINS, Ph.D., *Professor, Agronomy*

JEREMIAH GEORGE MOSIER, B.S., *Professor, Soil Physics*

LOUIE HENRIE SMITH, Ph. D., *Professor, Plant Breeding*

JAMES HARVEY PETTIT, Ph. D., *Professor, Soil Fertility*

LEONARD HEGNAUER, B.S., *Professor, Crop Production*



AXEL FERDINAND GUSTAFSON, M.S., *Associate, Soil Physics*  
ORA STANLEY FISHER, B.S., *Associate, Soil Fertility*  
HAROLD WILSON STEWART, B.S., *Associate, Soil Physics*  
WILLIAM LEONIDOS BURLISON, M.S., *Associate, Crop Production*  
IRA WILMER DICKERSON, B.S., *Instructor, Farm Mechanics*  
KARL JOHN THEODORE EKBLAW, B.S., *Instructor, Farm Mechanics*  
FREDERICK CHARLES BAUER, B.S., *Instructor, Soil Fertility*  
CHESTER OTIS REED, B.S., *Instructor, Farm Mechanics*  
ALBERT LEMUEL WHITING, Ph.D., *Instructor, Soil Biology*  
MARVIN EDWARD JAHR, A.B., *Instructor, Farm Mechanics*  
ORR ALLYN, B.S., *Assistant, Crop Production*

## COURSES FOR UNDERGRADUATES

Crops: Agronomy 7, 8, 22, 25

Farm Mechanics and Buildings: Agronomy 1, 2, 3, 4, 17, 19, 20,  
26, 27

Soils: Agronomy 9, 10, 11, 12, 13, 23

1. DRAINAGE.—Drainage and its surveying operations. Chain-  
ing, mapping, leveling, designing, setting grade stakes, laying tile.  
Lectures and laboratory first half semester; field work second half  
semester. II; (3). Mr. JAHR

2. FIELD MACHINERY.—Physics: work, horse-power, resolution  
of forces, simple machines. Whiffletrees and hitches. Ropes: care,  
use, knots, splices. Chains. Construction, operation, adjustment,  
purchase, and care of implements for soil and seed preparation, and  
for seeding, cultivating, harvesting, and handling farm crops. Lec-  
tures; laboratory work. (Alternating with Mechanical Engineering  
48 or 49 if desired.) I; (3). Mr. REED

3. FARM POWER MACHINERY.—Power transmission: ropes, belts,  
pulleys, gearwheels, shafting, friction, lubrication; sources of farm  
power: the horse as a motor, windmills, waterpower, steam engines,  
hot air engines, electric motors—their theory, operation, and econ-  
omy. Internal combustion engines and tractors—methods of ignition,  
theory, operation, and economy. Methods of applying power to field  
operations. Detailed design for a practical farm power plant. Lec-  
tures; laboratory. (Alternating with Mechanical Engineering 48 or  
49 if desired.) II; (3). Mr. DICKERSON

4. FARM BUILDINGS.—Arrangement, design, construction and  
cost; machinery sheds; granaries; corn cribs; chicken houses;

swine houses; barns; dwelling houses. Drafting of buildings; lectures; assigned readings. *I*; (5). Mr. EKBLAW

7. FARM CROPS.—Origin, history, development, and value; botanical relations; structure and requirement of seed for best development; preparation of the seed bed; seeding; cultivation, tillage, and inter-tillage; harvesting; time of maturity for various uses; rotations, or succession of crops; systematic farming, distribution of labor, cost of production, consumption of products, residues, by-products; marketing; market conditions; losses in and cost of storage; the general utility of each crop, its place in a system of farming, or a rotation; special attention to Illinois conditions. Class, reference, laboratory, and field work. *II*; (5).

Professor HEGNAUER

*Prerequisite:* Agronomy 25.

8. FIELD EXPERIMENTS.—Testing varieties of corn, oats, wheat, potatoes, and other farm crops; methods of planting corn, seeding grains, grasses, and other forage crops; culture of corn, potatoes, and sugar beets; practice in treating oats and wheat for smut, and potatoes for scab, and studying the effect upon the crops; combating cinch bugs and other injurious insects. Other practical experiments may be arranged with the instructor. *II*, and *summer vacation*; (2-5).

Professor HEGNAUER

*Prerequisite:* Agronomy 25 and 7.

9. SOIL PHYSICS AND MANAGEMENT.—Origin of soil material; methods of formation; mechanical composition and classification; moisture; texture as affecting capillarity, osmosis, diffusion, temperature, aeration, and as affected by plowing, harrowing, cultivating, rolling, and cropping; wasting by washing; fall or spring plowing and drainage as affecting moisture, temperature, and root development; real and apparent specific gravity, porosity, water holding capacity, and capillary power; the physical effects of different systems of rotation and of continuous cropping with various crops. Lectures; laboratory. *I*; (5).

Professor MOSIER, Mr. GUSTAFSON, Mr. STEWART, Mr. FISHER

*Prerequisite:* Chemistry 1 and one unit in entrance physics; at least one year of university work. Regular students are urged to take this course after or in conjunction with Chemistry 13a; others consult instructor.

10. SPECIAL WORK IN SOIL PHYSICS.—Physical properties of special soils; centrifugal analysis of such soils; field observation of the

effects of discing, harrowing, and rolling; time and depths of cultivation; soil moisture and temperature; effects of washing of soils; methods of prevention. *I* or *II*; (2-5).

Professor MOSIER, Mr. GUSTAFSON

*Prerequisite:* Agronomy 9.

11. SOIL BIOLOGY.—Activities of infusoria, fungi, algae, and bacteria in soils from the standpoint of soil fertility; fermentation of crop residues and green and farm manures and its effect upon insoluble plant food; fixation of atmospheric nitrogen, its transformations, use, and possible losses. Lectures; laboratory. *II*; (3).

Professor PETTIT, Dr. WHITING

*Prerequisite:* Agronomy 12; Botany 5.

12. SOIL FERTILITY, FERTILIZERS, ROTATIONS.—The influence of fertility upon the yield of various crops; effect of different crops upon the soil and upon succeeding crops; different rotations; ultimate effect of different systems of farming upon fertility and productivity; manures and fertilizers, their composition and value; soils cropped continuously with different crops and with a series of crops; the fertility of soils of different types or classes from different sections of Illinois. Lectures; laboratory. *II*; (5).

Professor HOPKINS, Mr. FISHER, Mr. BAUER

*Prerequisite:* Chemistry 13a; Agronomy 9.

13. INVESTIGATION OF THE FERTILITY OF SPECIAL SOILS.—Soils in which the student is particularly interested. Determination of the nature and quantity of the elements of fertility; effect upon various crops of different fertilizers added to the soils, as determined by pot cultures, and by plot experiments; systematic study of similar work of experiment stations and experimenters. *I, II*; (2-5).

Professor HOPKINS, Professor PETTIT

*Prerequisite:* Agronomy 12.

16. GERMAN AGRICULTURAL READINGS.—Special attention to soils and crops. The current numbers of German journals of agricultural science used as texts. *II*; (2).

Professor HOPKINS

*Prerequisite:* Two years' work in German; Agronomy 12.

17. HARVESTING MACHINERY.—Expert work on grain binders, corn binders, mowers, hay rakes, loaders, and stackers. (For students preparing to do expert work on these machines in the field.) *II*; (3).

Mr. REED

*Prerequisite:* One year of university work; Agronomy 2, 3; M. E. 48; the consent of the instructor.

18. INVESTIGATION AND THESIS.—*I, II; (5-10).*

Professors HOPKINS, MOSIER, SMITH, PETTIT, HEGNAUER

## 19. RESEARCH WORK IN FARM MECHANICS.—(Consult instructor regarding time and requirements.)

Mr. DICKERSON, Mr. EKBLAW, Mr. JAHR, Mr. REED

20. CONCRETE CONSTRUCTION FOR AGRICULTURAL PURPOSES.—Materials; mixing and using; simple comparative tests; general specifications and estimates for walks, posts, tanks, floors, and foundations. *II; (2).*

Mr. EKBLAW

22. PLANT BREEDING.—The improvement by breeding of field crops, including the grains, grasses, and legumes; selection; results obtained by various investigators. Lectures; assigned readings; demonstrations; laboratory. *II; (2).*

Professor SMITH

*Prerequisite:* Botany 1; Chemistry 13a; Agronomy 25.23. PLANT FOOD SUPPLIES.—The world's supply of plant food materials; utilization and conservation. *II; (1).*

Professor PETTIT

*Prerequisite:* Agronomy 12.25. FARM CROPS.—Plant growth; structure; habits and requirements; preparation of the seed bed; seed selection for productiveness; storing; care of stored grain to prevent deterioration in vitality, or loss in market requirements; grading and fanning of grain as a means of improvement; market grades of grain and grain judging; examination of grains for purity; testing for vitality; weeds; identification, methods of distribution, eradication, control; diseases of farm crops and methods of prevention. *I or II; (4).*

Professor HEGNAUER, Mr. BURLISON

[26. FARM BUILDINGS AND EQUIPMENT.—Location; design; construction; cost; maintenance; efficiency; economy. Lighting; heating; ventilation; water supply; plumbing; sewage disposal; home power-plant; minor household and farm conveniences. Lectures, recitations, problems, with some elementary drafting. *II; (3).* Not given in 1912-13.]

Mr. EKBLAW]

27. DRAINAGE DESIGN.—Designing tile drainage systems from level note data and contour maps; estimating sizes, amounts, and cost of tile, and cost of systems complete; designing outlet open ditch systems for drainage districts, estimating sizes and costs; drainage district laws; preparing bids on contract jobs; advanced field work. *I; (1-5).*

Mr. JAHR

*Prerequisite:* Agronomy 1, or C. E. 21 or 22.

## COURSES FOR GRADUATES

Students who wish to do their major work in agronomy must have had the major courses offered in that subject to undergraduates in the College of Agriculture of the University of Illinois, or the equivalent. While every one seeking a doctor's degree with agronomy as a major will be required to have a good knowledge of the whole field of agronomy, each student is expected to be especially prepared in some one of the following divisions of the field: soil fertility, plant breeding, soil physics, crop production, and soil biology.

Students who are taking their major work in other departments and choose agronomy as a minor must have had previously the work in chemistry, botany, and other fundamental sciences prescribed in the undergraduate courses for students of agronomy in the College of Agriculture, or the equivalent.

101. SOIL INVESTIGATION.—Systems of soil investigation; sources of error and methods of control; interpretation of results. *Once a week; II.* Professor HOPKINS

103. SOIL HISTORY.—Different systems of agricultural practice and their ultimate effect upon the soil. *Once a week; II.* Professor HOPKINS

112. PLANT BREEDING.—A detailed study of experiments at this station; methods and results reported from other states and from foreign countries. *Once a week; I, II.* Professor SMITH

*Prerequisite:* Botany I; Chemistry 13a.

118. INVESTIGATION.—Professors HOPKINS, MOSIER, SMITH, PETTIT

## ANIMAL HUSBANDRY

(Including FARM MANAGEMENT)

HERBERT WINDSOR MUMFORD, B.S., *Professor, Animal Husbandry*

HARRY SANDS GRINDLEY, D.Sc., *Professor, Animal Chemistry*

LOUIS DIXON HALL, M.S., *Assistant Professor, Animal Husbandry*

WALTER CASTELLA COFFEY, M.S., *Assistant Professor, Sheep Husbandry*

EDWIN STANTON GOOD, M.S., *Assistant Professor, Swine Husbandry*

JOHN A DETLEFSEN, D.Sc., *Assistant Professor, Genetics*

HENRY PERLY RUSK, M.S.A., *Associate, Beef Cattle*

JAMES LLOYD EDMONDS, B.S., *Associate, Horse Husbandry*  
 DANIEL OTIS BARTO, B.S., *Associate, Poultry Husbandry*  
 WALTER EDWARD JOSEPH, Ph.D., *Instructor, Animal Husbandry*  
 WILLIAM HERSCHEL SMITH, M.S., *Instructor, Animal Husbandry*  
 WALTER FREDERICK HANDSCHIN, *Assistant, Animal Husbandry*  
 SLEETER BULL, M.S., *Instructor, Animal Nutrition*  
 JOHN JONATHAN YOKE, *Assistant, Animal Husbandry*  
 VIRGIL AUGUSTUS PLACE, B.S., *Assistant, Animal Husbandry*  
 HAROLD CLAYTON M. CASE, B.S., *Assistant, Animal Husbandry*  
 WILBUR JEROME CARMICHAEL, *Assistant, Animal Husbandry*  
 JOHN RICHARD WELLS, B.S., *Assistant, Animal Husbandry*

## COURSES FOR UNDERGRADUATES

Beef Cattle: *Animal Husbandry* 11a, 11b  
 Breeding, Feeding, and Management: *Animal Husbandry* 6, 7, 14,  
 28, 29, 30  
 General Judging: *Animal Husbandry* 5, 22  
 Horses: *Animal Husbandry* 4a, 4b, 17  
 Meat: *Animal Husbandry* 10, 24  
 Poultry: *Animal Husbandry* 23  
 Sheep: *Animal Husbandry* 1a, 1b, 25, 27  
 Swine: *Animal Husbandry* 2a, 2b, 26

NOTE.—Students registered in advanced courses such as 14, 22, 28, etc., will be required to participate in a tour of inspection of representative herds, flocks, and studs.

1a. SHEEP: BREEDS AND MARKET CLASSES.—Breeds extensively used for mutton and wool production; type, characteristics, and adaptability; market classes and grades of sheep and wool. Lectures; judging. 1; (2). Assistant Professor COFFEY, Mr. PLACE  
*Prerequisite:* *Animal Husbandry* 5 or its equivalent.

1b. SHEEP: BREEDING, FEEDING, AND MANAGEMENT.—Pure bred and grade flocks: feeding, housing, and shepherding. Lectures; reference readings. 1; (3). Assistant Professor COFFEY, Mr. PLACE  
*Prerequisite:* *Animal Husbandry* 5 and 6 or their equivalents.  
 It is advisable to take 1a and 1b simultaneously.

2a. SWINE: BREEDS AND MARKET CLASSES.—History of the leading breeds: type, characteristics, and adaptability; market

classes and grades; market reports. Lectures; judging. *II*; (2).

Assistant Professor GOOD, Mr. CARMICHAEL

*Prerequisite:* Animal Husbandry 5 or its equivalent.

2b. SWINE HUSBANDRY.—Swine raising from the standpoint of market requirements and of economic production; breeding, housing, care, and feeding of swine for breeding purposes. *II*; (3).

Assistant Professor GOOD, Mr. CARMICHAEL.

*Prerequisite:* Animal Husbandry 5 and 6, or their equivalents.

It is advisable to take 2a and 2b simultaneously.

4a. BREEDS OF HORSES AND MARKET CLASSES OF HORSES AND MULES.—History of the leading breeds; type, characteristics, and adaptability; market classes, grades, and requirements. Lectures; judging. *II*; (2).

Mr. EDMONDS, Mr. YOKE

*Prerequisite:* Animal Husbandry 5, or its equivalent.

4b. BREEDING, FEEDING, AND MANAGEMENT OF HORSES.—Methods: care of stallions, mares, and foals; of work horses and drivers at labor and idle; fattening horses for market. Lectures; assigned readings. *II*; (3).

Mr. EDMONDS, Mr. YOKE

*Prerequisite:* Animal Husbandry 5 and 6, or their equivalents.

It is advisable to take 4a and 4b simultaneously.

5. FUNDAMENTALS OF LIVE STOCK JUDGING.—The names and location of external parts of the various kinds of live stock, the use of the score card, comparative judging as a method, breed identification, and types of farm animals. Required in freshman year. *I*; (3).

Assistant Professor COFFEY and members of the department

6. PRINCIPLES OF FEEDING AND BREEDING.—Feeding; classification, digestibility, and functions of food nutrients; market grades and food values of feeding stuffs; feeding standards and calculation of balanced rations for farm animals.

Breeding: evolution of domesticated animals; history of systematic breeding and improvement; unit characters; range of variability; effects of selection; systems of breeding.

Required in sophomore year. *I*; (3).

Feeding: Assistant Professor HALL, Dr. JOSEPH, Mr. BULL

Breeding: Mr. HANDSCHIN, Mr. SMITH, Mr. CASE

7. PRINCIPLES OF ANIMAL NUTRITION.—Composition and fuel value of feeding stuffs; organic and inorganic food stuffs; digestion, absorption, and metabolism; elimination of metabolic products;

coefficients of digestibility and nutritive value of feeding stuffs. *I*; (3).

Professor GRINDLEY, Dr. JOSEPH, Mr. BULL

*Prerequisite:* Animal Husbandry 5 (or course formerly known as Animal Husbandry 21); Chemistry 13a.

9. INVESTIGATION AND THESIS.—*I* or *II*; (5-10).

10. MEAT.—Farm butchering, curing, and care of meats; yield, quality and values of meat and by-products, as related to breeding, feeding, and health of animals; classes, grades, and cuts of meat in wholesale and retail markets. *II*; (3). Assistant Professor HALL

*Prerequisite:* Animal Husbandry 5 and 6, or their equivalents.

11a. BEEF CATTLE.—Breeds and market classes; history of the leading breeds; beef type from the standpoint of the butcher, the feeder, and the breeder; classification and value of each grade according to current market reports. Judging; lectures; quizzes; assigned readings. *I*; (2).

Mr. RUSK, Mr. SMITH

*Prerequisite:* Animal Husbandry 5 or its equivalent.

11b. BEEF PRODUCTION.—Breeding and management of pure bred herds; breeding for market; combined beef and milk production; economic factors in cattle feeding; influence of age, grade, breed, condition, and sex; equipment; pork and manure as by-products of beef production. Lectures; quizzes; assigned readings (text book). *I*; (3).

Mr. RUSK, Mr. SMITH

*Prerequisite:* Animal Husbandry 5 and 6, or their equivalents.

It is advisable to take 11a and 11b simultaneously.

14. MANAGEMENT OF PURE-BRED HERDS, FLOCKS, AND STUDS.—Housing and management; selecting and fitting animals for sale and for the show ring; advertising and sale of surplus stock. Laboratory work with animals in University barns; lectures; assigned readings. *II*; (3).

Professor MUMFORD and other members of the department

*Prerequisite:* Animal Husbandry 5 and 6, and six hours' credit from 1b, 2b, 4b, 11b. See note, page 264.

15.—DAIRY CATTLE.—(See Dairy Husbandry 2 and 3.)

[17. EDUCATION AND DRIVING OF THE HORSE.—Mental qualities, peculiarities, and limitations of the horse; education and training for labor or the road; correct driving; responsibilities of the driver; courtesies of the highway. Lectures; readings; practice. *II*, (2). Not given in 1912-13.

Mr. EDMONDS

*Prerequisite:* Animal Husbandry 4a and 4b; three semesters' work in the University or its equivalent.]



22. **ADVANCED STOCK JUDGING.**—Animal conformation, quality, and condition with reference to market and show yard requirements; the selection of horses, beef cattle, sheep, and swine, for feed lot, market, and exhibition; judging at live stock shows. *I*; (3)

Professor MUMFORD and instructors in charge of prerequisite courses

*Prerequisite:* Animal Husbandry 1a, 2a, 4a, 11a, or their equivalents. See note, page 264.

23. **POULTRY: TYPES, BREEDS, AND VARIETIES.**—Exhibiting and judging; principles of breeding; poultry houses and equipment; feeding, hatching, and brooding; market eggs and poultry; crate-fattening and dressing; diseases and their treatment. *II*; (5).

Mr. BARTC

*Prerequisite:* Animal Husbandry 5, or its equivalent.

24. **MEAT.**—Influence of type, condition, age, sex, and feeds upon the yield and market grade of meat products. *II*; (2-5).

Assistant Professor HALL

*Prerequisite:* Animal Husbandry 10, and 1a or 2a or 11a, three years' work in the University, or its equivalent.

25. **WOOL.**—Quality, quantity, strength, and condition of wool. *II*; (2-5).

Assistant Professor COFFEY

*Prerequisite:* Animal Husbandry 1a, 1b; three years' work in the University, or its equivalent.

[26. **SWINE HUSBANDRY.**—Special problems in swine production. *II*; (2-5). Not given in 1912-13.

Assistant Professor GOOD

*Prerequisite:* Animal Husbandry 2a, 2b; three years' work in the University, or its equivalent.]

27. **SHEEP HUSBANDRY.**—Factors determining the importance of the industry in leading sheep growing countries, particularly different parts of the United States. *II*; (2-5).

Assistant Professor COFFEY

*Prerequisite:* Animal Husbandry 1a, 1b; three years work in the University, or its equivalent.

28. **ADVANCED HISTORY OF BREEDS OF LIVE STOCK.**—Horses, beef cattle, sheep, and swine. Methods of great breeders; performances and pedigrees of famous animals; breed type as exemplified in the University and other herds. Lectures; assigned readings; problems, Breeds offered in 1912-13: Beef cattle, Shorthorns, Aberdeen Angus; horses, Percherons, Standard breds; swine, Berkshires, Duroc Jerseys; sheep, Shropshires, Rambouillets. Breeds offered in 1913-14: Beef Cattle, Herefords, Galloways; horses, Shires, American Sad-

dlers; swine, Poland Chinas, Chester Whites; sheep, Hampshires, Oxford Downs. *I*; (3-5).

Professor MUMFORD and other members of the department

*Prerequisite*: "a" and "b" courses in class of live stock elected.

See note, page 264.

29. SYSTEMS OF LIVE STOCK FARMING.—The principles of management; influence of climate, topography, soil, character of the people, location, and other factors. *II*; (2). Mr. HANDSCHIN

*Prerequisite*: Animal Husbandry 5 and 6; six hours credit from 1b, 2b, 4b, or 11b; Farm Management 1.

30. GENETICS.—Heredity; variation; Mendel's and Galton's Laws; dominance and segregation; gametic coupling and spurious allelomorphism; correlation; mutation theory; inheritance of acquired characters; prenatal influence; pure lines, selection, variability; modification of unit-factors. Practical application to breeding. Lectures; laboratory. *II*; (5). Assistant Professor DETLEFSEN

*Prerequisite*: Two years of university work, including ten hours in biology.

#### COURSES FOR GRADUATES

Students entering graduate work in Animal Husbandry should have had a thorough training in the fundamental principles of the subject either in connection with or in addition to an agricultural course of study substantially equivalent to that offered in this University.

See courses 7, 22, 24, 25, 26, 27, in undergraduate list, which are also open to graduate students.

103. LIVE STOCK EXPERIMENTATION.—Objects, methods, and the sources of error in experimental work dealing with the feeding, breeding, and management of farm animals; experiments at this and other experiment stations. *Once a week; I, II.*

Professor MUMFORD

[110. ANIMAL NUTRITION.—Recent scientific publications on the chemistry and physiology of the nutrition of the lower animals; the chemical and physiological changes and processes involved in the activities of animal life. Lectures; conferences; assigned readings. *Three times a week; I, II.* Not given 1912-13.

Professor GRINDLEY]

III. ANIMAL NUTRITION.—Examination and analysis of feeding stuffs and animal substances including flesh, fat, bone, urine, feces, and manufactured animal products. Lectures; conferences; assigned readings; laboratory. *Two to five times a week; I, II.*

Professor GRINDLEY

II2. INVESTIGATION.—

- (a) Economic factors involved in the various phases of meat production.
- (b) Systems of live stock farming.
- (c) The valuation of pedigrees.
- (d) Animal Nutrition: Digestion and metabolism experiments and biochemical studies connected with the nutrition of farm animals.

(a), (b), and (c), *once a week; I, II.* Under the direction of Professor MUMFORD

(d), *daily; I, II.* Under the direction of Professor GRINDLEY

II6. SEMINAR.—Reports; discussion of special topics. *I, II.*

Professor MUMFORD, Professor GRINDLEY, and others

FARM MANAGEMENT

I. ELEMENTARY FARM MANAGEMENT.—The factors of production in the farm business; systems of farming, their distribution, and adaptation; farm organization; the distribution of capital invested; planning of the farm; farm administration or operation; planning of work; handling of labor; developing management efficiency. Lectures; quiz. *II; (2).* Mr. HANDSCHIN

*Prerequisite:* Three semesters of required work; Economics 2.

ARCHITECTURE

FREDERICK MAYNARD MANN, M.S., C.E., *Professor*

NATHAN CLIFFORD RICKER, D.Arch., *Professor*

NEWTON ALONZO WELLS, M.P., *Professor, Architectural Decoration*

JAMES McLAREN WHITE, B.S., *Professor, Architectural Engineering*

CHARLES RICHARD CLARK, B.S., *Associate, Architectural Construction*

ROY CHILDS JONES, B.S., *Instructor*

ROBERT TAYLOR JONES, B.S., *Instructor*

SIDNEY FISKE KIMBALL, M.Arch., *Instructor*

ALLEN HOLMES KIMBALL, M.S., *Instructor, Architectural Design*

JOSEPH MITCHELL KELLOGG, M.Arch., *Instructor, Architectural Design*

FREDERICK KITSON COWLEY, *Instructor*

SAMUEL C. BURTON, *Instructor*

WINIFRED FEHRENKAMP, B.L.S., *Librarian*

4. BUILDING SANITATION.—Plumbing, trap ventilation, removal of wastes; construction of water closets; drains, and systems of water supply; sewage disposal; water supply and fixtures in dwellings. Cosgrove's *Principles and Practice of Plumbing*. Recitations; lectures; designs for special problems. *I*; (2). Mr. CLARK  
*Prerequisite*: Registration in Physics 2a, 2b; Architecture 2, 3.

5. GRAPHIC STATICS.—Same as 45 and 46. *One lecture and nine hours drawing per week. II*; (4). Mr. CLARK

6. HISTORY OF ARCHITECTURE.—From the Egyptian period to modern times; effects of political, economic, and local conditions; influence of materials, climate, structural systems; architecture of the various countries and periods; evolution of architectural forms. Illustrated lectures; quizzes. *I, II*; (4). Professor RICKER  
*Prerequisite*: Sophomore standing in architecture or architectural engineering.

8. ARCHITECTURAL DRAWING.—Perspective; shades and shadows; conventional rendering; relations of plans, elevations, and sections to each other; elementary architectural composition. *Nine hours drawing per week. II*; (3). Mr. A. H. KIMBALL  
*Prerequisite*: General Engineering Drawing 1, Architecture 20.

10. ESTIMATING.—Methods and practice of estimating building costs. *II*; (1). Mr. CLARK

12, 13, 14, 15. HISTORY OF ARCHITECTURE.—Covers approximately the same ground as Architecture 6. *Sophomore I, II; Junior I, II*; (2). Professor RICKER  
*Prerequisite*: Architecture 31, 32.

14a. ARCHITECTURAL PERSPECTIVE.—Theory of perspective; labor-saving methods; freehand perspective; problems in angular, parallel, vertical, and curvilinear perspective, and in perspective shades and shadows. *One lecture and three hours drawing per week. I*; (2). Mr. A. H. KIMBALL  
*Prerequisite*: General Engineering Drawing 1, 2.

15a. DESIGN.—(Architectural design for architectural engineers.) Order and plan problems. *Nine hours drawing per week. II; (3).*

Mr. A. H. KIMBALL

*Prerequisite:* General Engineering Drawing 1, 2; Architecture 20, 8.

19. ARCHITECTURAL ENGINEERING.—Graphic statics applied to the analysis of metallic roofs of wide span; roof trusses of curved or unusual form and those supported by abutments and jointed, spherical, and conical trussed domes; the stone arch, vault, and dome, and of the Gothic system of vaults and buttresses; the strength of walls, dams, retaining walls, and large chimneys; the effect of moving loads on girders; construction and details of steel skeleton buildings. Problems in design for specified cases. *Tucker's Steel Construction; Ricker's Notes on Architectural Engineering. Nine hours drawing per week. I, II; (3).*

Mr. CLARK

*Prerequisite:* Theoretical and Applied Mechanics 6, 7, 8, 9; Architecture 43, 44, 5.

20. ARCHITECTURAL AND FREEHAND DRAWING.—Freehand drawing from the cast; principles of architecture; architectural elements: walls, moldings, doors, windows, the Orders, etc. Lectures and sketching. *Two lectures and seven hours drawing per week. I; (3).*

Mr. A. H. KIMBALL

23, 24. FREEHAND DRAWING.—Charcoal drawing from the cast. *Six hours drawing per week. I, II; (2).*

Professor WELLS, Mr. COWLEY

25, 26. FREEHAND DRAWING.—Charcoal, pen, pencil, and water color drawing from the cast and from still life. Out-of-door sketching. *Six hours drawing per week. I, II; (2).*

Professor WELLS, Mr. COWLEY

27, 28. FREEHAND DRAWING.—Water color drawing; original decorative composition; out-of-door sketching. *Six hours drawing per week. I, II; (2).*

Professor WELLS

31. ARCHITECTURAL AND FREEHAND DRAWING.—Practice with instruments, pen, pencil, and brush; lettering; shades and shadows; perspective. Charcoal drawing from the cast. *One lecture and eleven hours drawing per week. I; (4).*

Mr. S. F. KIMBALL, Mr. BURTON, Mr. COWLEY

*Prerequisite:* Registration in G. E. D. 2.

32. ARCHITECTURAL AND FREEHAND DRAWING.—Elements of

architecture; walls, moldings, doors, windows, the Orders, vaults, roofs, stairs. Wash rendering, stereotomy, charcoal drawing from the cast. Lectures and sketching. *One lecture and eleven hours of drawing per week. II; (4).*

Mr. S. F. KIMBALL, Mr. BURTON, Mr. COWLEY

*Prerequisite:* Architecture 31.

33, 34 DESIGN.—(Elementary). Rendered order problems and sketch problems involving simple composition; library research in elements of composition. *Nine hours drafting room per week. I, II; (3).*

Mr. KELLOGG, Mr. A. H. KIMBALL

*Prerequisite:* Architecture 31, 32.

34a. ARCHITECTURAL ENGINEERING SEMINAR.—Current literature; reports and discussions. *I; (1).* Professor WHITE

35, 36. DESIGN.—(Intermediate). Rendered plan problems and sketch problems; library research in plan and interior elements. *Fifteen hours drafting room per week. I, II; (5).* Mr. R. C. JONES

*Prerequisite:* Architecture 33, 34.

37. DESIGN.—(Advanced). Extended problems in original design. *Twenty-one hours drafting room per week. I; (7).*

Professor MANN

*Prerequisite:* Architecture 35, 36.

38. THESIS.—The working out of an extended original problem in design or construction. First semester: preliminary work; second semester: prescribed hours meet but part of the thesis requirement. *Twenty-one hours drafting room per week. I, II; (7).*

Professor MANN, Professor WHITE

43. SPECIFICATIONS AND WORKING DRAWINGS.—The growth, cutting, seasoning, working, and finishing of woods; structural and decorative properties; detailing at large scale various parts: floors, walls, roofs, doors, windows, cornices, stairs, wainscoting, cabinet-work, internal finish; detail sketches of similar work in process of actual construction. *Kidder's Building Construction, Part II. Two lectures and four hours drawing per week. I; (3).* Mr. R. T. JONES

*Prerequisite:* General Engineering Drawing 2; Architecture 31, 32.

44. SPECIFICATIONS AND WORKING DRAWINGS.—Foundations of stone, brick, concrete, and piles; materials employed in stone masonry; their uses, defects, qualities, and modes of preparation; kinds of masonry and external finish; tools for stone cutting and their

use; brick masonry, its materials and bonds; terra-cotta design, manufacture, and use; manufacture and refining of cast iron, wrought iron, and steel; pattern making, molding, casting, refining, rolling, etc., and standard dimensions or sections; detailing of columns, beams, girders, and footings; joints and connections. *Kidder's Building Construction and Superintendence. Part I. Two lectures and four hours drawing per week. II; (3).*

Mr. R. T. JONES

*Prerequisite:* General Engineering Drawing 2; Architecture 31, 32.

45. GRAPHIC STATICS.—Elements of graphic statics and their application in the analysis of trussed roofs, steel and masonry arches, domes. The graphical representation of reactions, bending moments, and shear, in beams. *Ricker's Notes on Graphic Statics. One lecture and six hours drawing per week. I; (3).* Mr. CLARK

*Prerequisite:* Theoretical and Applied Mechanics 14, 15, 16.

46. STRUCTURES.—Design of wooden and steel roofs; determination of section of members; design of joints; mill and steel skeleton construction. *One lecture and three hours drawing per week. II; (3).* Mr. CLARK

*Prerequisite:* Architecture 45.

55. BUILDING SANITATION.—(Similar to Architecture 4). *I; (1).*

Mr. CLARK

*Prerequisite:* Physics 2a, 2b; Architecture 2, 3.

57. HEATING AND VENTILATION.—Theory and practice of warming and ventilating buildings; fuels and production of heat; flow of gases through ajutages and pipes; calculation of dimensions of air ducts and chimneys; systems of heating: furnaces, hot water, steam; sources of impurity in the air and requirements of good ventilation; methods of ventilation by aspiration, by fans; fans of different types. Problems; design of heating plants. *Hoffman's Heating and Ventilation. I, II; (2 or 3).* Professor WHITE

*Prerequisite:* Architecture 43, 44, 55; Physics 2a, 2b; or 1, 3.

59. DOMESTIC ARCHITECTURE.—(Given in connection with Household Science 2.) Lectures; criticism.

Professors MANN and WHITE, Mr. CLARK, Mr. R. T. JONES

60. SPECIAL LECTURES.—Lectures by members of the staff and by invited architects. *One lecture per week. I, II; (1).*

In charge of Professor MANN

65, 66. THEORY OF ARCHITECTURE.—Influence of function on architectural form; theory of architectural composition in plan and elevation; problem analysis. Lectures; research; exercises. *I, II*; (1). Mr. R. C. JONES

*Prerequisite:* Architecture 33, 34.

67. (41). THEORY OF FORM AND COLOR.—Principles underlying pleasing arrangements of form and color; rhythm and sequence; harmony and contrast; proportion and balance. Lectures; exercises. *I*; (2). Professor WELLS

*Prerequisite:* Architecture 25, 26, 35, 36.

68. (12). BUSINESS RELATIONS.—The relations of the architect, owner, and builder; forms of contracts and contract clauses; estimating; office organization; building ordinances; professional ethics. *II*; (3). Professor MANN

*Prerequisite:* First three years of the courses in Architecture or Architectural Engineering.

#### COURSES FOR GRADUATES

Entrance upon graduate work in architecture presupposes the full undergraduate course in that subject. Semi-weekly conferences are held and additional instruction given, in all courses, as may be required.

101. ARCHITECTURAL CONSTRUCTION.—Design of special structures. *Arrange hours; I, II.* Professors RICKER and WHITE

102. SANITATION OF BUILDINGS.—The planning of sanitation, warming, and ventilation, for buildings of importance. *Arrange hours; I, II.* Professors RICKER and WHITE, Mr. CLARK

103. ADVANCED ARCHITECTURAL GRAPHICS.—Advanced work in graphic statics, stereotomy, perspective, water color, and free-hand drawing. *Arrange hours; I or II.* Professors RICKER, WELLS

104. ARCHITECTURAL DESIGN.—Advanced architectural design. *Arrange hours; I or II.* Professor MANN

105. ARCHITECTURAL PRACTICE.—Contracts, specifications, and office methods; architectural jurisprudence. *Arrange hours; I or II.* Professors MANN, RICKER, WHITE

106. ADVANCED ARCHITECTURAL HISTORY.—Special research in architectural history. *Arrange hours; I or II.*

Professors MANN and RICKER



ART AND DESIGN

EDWARD JOHN LAKE, B.S., *Assistant Professor*

MARY MINERVA WETMORE, *Instructor*

CHARLES FABENS KELLEY, A.B., *Instructor*

ISABEL JONES, *Instructor*

1. FREE-HAND DRAWING.—The principles of perspective; practice in drawing. *I, II; (2).*

Assistant Professor LAKE, Miss JONES, Mr. KELLEY

2. LIGHT AND SHADE.—Shaded drawing in monochrome. *II; (2).*

Assistant Professor LAKE, Miss JONES

*Prerequisite:* Art and Design 1.

3. ANTIQUE DRAWING.—Practice in drawing; study of artistic anatomy. *I, II; (2).*

Miss WETMORE

*Prerequisite:* Art and Design 1.

4. WATER COLOR PAINTING.—Still-life; flowers; landscapes. *I, II; (3).*

Miss JONES

*Prerequisite:* Art and Design 1, 2.

5. DRAWING FROM LIFE.—Posed model in costume. *I, II; (2).*

Miss WETMORE

*Prerequisite:* Art and Design 1, 2, 3.

6. PORTRAIT IN OIL COLOR.—Figure and portrait in costume. *I, II; (2).*

Miss WETMORE

*Prerequisite:* Art and Design 1, 2.

7. OIL PAINTING.—Still-life; flowers; landscape. *I, II; (3).*

Miss WETMORE

*Prerequisite:* Art and Design 1, 2.

8. MODELING.—Antique and figure; plaster casting. *I, II; (2).*

Assistant Professor LAKE

*Prerequisite:* Art and Design 1.

10. SKETCHING IN MONOCHROME.—General practice in pen and pencil. *II; (1).*

Assistant Professor LAKE

*Prerequisite:* Art and Design 1.

12. DESIGN.—Theory and practice. *I, II; (2).*

Mr. KELLEY

*Prerequisite:* Art and Design 1.

13. DESIGN.—History and practice. *I, II; (3).*

Mr. KELLEY

*Prerequisite:* Art and Design 1, 12.

14. DESIGN.—Advanced practice. *I, II; (3).* Mr. KELLEY  
*Prerequisite:* Art and Design I, 12, 13.

19. HISTORY OF THE FINE ARTS.—*I, II; (2).*  
 Assistant Professor LAKE  
*Prerequisite:* One year of college work.

## ASTRONOMY

\*JOEL STEBBINS, Ph.D., *Assistant Professor*

FRANK WALKER REED, Ph.D., *Instructor*

Instruction in astronomy is arranged both for general students and for those who desire to take up the science from its technical side. Advanced students are given every opportunity to become familiar with the use of modern astronomical instruments. The equipment of the department is contained in the Astronomical Observatory. The principal instruments are a 12-inch refracting telescope by Warner and Swazey, and Brashear, and a 3-inch transit and zenith telescope. There are also two smaller equatorials, two Riefler clocks, and a considerable amount of minor apparatus such as chronometers, transits, sextants, spectroscopes, photometer, photographic outfit, and calculating machines. The astronomical library comprises about 1,200 volumes, and includes all of the important astronomical periodicals.

Students without mathematical training may elect course 1. Course 4 is for beginners, but requires a knowledge of trigonometry. Other courses should be taken in the following order: 3, 6, 15, 14, 7.

### COURSES FOR UNDERGRADUATES

1. ELEMENTARY ASTRONOMY.—Lectures; recitations; one evening a week at the observatory. (For beginners; mathematics not required.) *I; (3).*

Assistant Professor STEBBINS, Dr. REED

3. GENERAL ASTRONOMY FOR ENGINEERS.—Descriptive astronomy; required with course 6. *II; (3).*

Assistant Professor STEBBINS, Dr. REED

*Prerequisite:* Mathematics 7 or 8a.

4. GENERAL ASTRONOMY.—Lectures; recitations; two evenings a week at the observatory. *II; (5).*

Dr. REED

*Prerequisite:* Mathematics 4.

6. PRACTICAL ASTRONOMY.—Rough and accurate determinations.

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\*On leave.

of latitude, azimuth, and time, especially with the ordinary surveyor's transit; the art of computing. *II*; (2).

Assistant Professor STEBBINS, Dr. REED

*Prerequisite*: Mathematics 7 or 8a.

#### FOR ADVANCED UNDERGRADUATES AND GRADUATES

7. THEORETICAL ASTRONOMY.—Celestial mechanics; theory of orbits; perturbations; canonical transformations. *I, II*; (3).

Dr. REED

*Prerequisite*: Mathematics 8a or 7 and 9.

9. CELESTIAL MECHANICS.—Properties of canonical systems of differential equations; integration by series; periodic and asymptotic solutions; integral invariants. *I, II*; (3).

Dr. REED

*Prerequisite*: Mathematics 16; Astronomy 7.

14. OBSERVATIONAL ASTRONOMY.—The working methods of an astronomical observatory; individual problems. *II*; (3).

Assistant Professor STEBBINS, Dr. REED

*Prerequisite*: Astronomy 15.

15. GEODETIC ASTRONOMY.—The sextant, transit, and zenith telescope; methods similar to those of the United States Coast Survey. *I*; (3).

Assistant Professor STEBBINS, Dr. REED

*Prerequisite*: Mathematics 7 or 8a.

#### COURSE FOR GRADUATES

101. SEMINAR AND THESIS.—*Three times a week; I, II.*

Assistant Professor STEBBINS, Dr. REED

#### BACTERIOLOGY

(See BOTANY 5, 6, 8, 103, 104.)

BANKING (See ECONOMICS.)

#### BIOLOGY

(See BOTANY, ENTOMOLOGY, PHYSIOLOGY, and ZOOLOGY.)

#### BOTANY

THOMAS JONATHAN BURRILL, Ph.D., LL.D., *Professor, Emeritus*

CHARLES FREDERICK HOTTES, Ph.D., *Assistant Professor*

OTTO RAHN, Ph.D., *Assistant Professor*

JAMES THEOPHILUS BARRETT, Ph.D., *Associate*

WARDER CLYDE ALLEE, Ph.D., *Instructor*

STELLA MARY HAGUE, Ph.D., *Assistant*

JOHN HAMILTON WHITTEN, A.B., *Assistant*

ROSALIE MARY PARR, A.M., *Assistant*

REED O'SHEA BRIGHAM, B.S., *Assistant*

RUTH SARAH ATWELL, B.S., *Assistant*

CLYDE ROSS NEWELL, M.S., *Assistant*

BRONSON BARLOW, B.S., *Assistant*

CLINTON ALBERT LUDWIG, B.S.A., *Graduate Assistant*

SAMUEL HAWTHORNE SCHERFEE, A.B., *Graduate Assistant*

ERNEST MICHAEL RUDOLPH LAMKEY, *Graduate Assistant*

Courses numbered 1 to 16 inclusive are primarily for undergraduates; those numbered 101 to 104 inclusive are for graduates only. The undergraduate work may be roughly classified in four somewhat distinctive lines, viz: 1, anatomy and physiology (courses 1, 3, 7, 9, 14); 2, morphology and taxonomy (courses 2, 4, 16); bacteriology (courses 5, 6, 8). Course 11 is an introductory one and 15 is for prospective teachers. Courses 1, 2, and 4 form together a general introduction to the science and may be elected by those who propose to go no farther or with equal propriety by those who are to pursue subsequently the more specialized work.

1. HISTOLOGY AND PHYSIOLOGY.—The tissues and organs of plants; the phenomena of nutrition, growth, and irritability; II; (5).

Assistant Professor HOTTES, Dr. ALLEE, Mr. WHITTEN, Miss PARR, Mr. BRIGHAM, Miss ATWELL, Mr. LUDWIG, Mr. SCHERFEE, Mr. LAMKEY

*Prerequisite:* Entrance credit in botany, or Botany 11; Chemistry 1 or Physics 2a.

2. MORPHOLOGY.—The principal plant groups, beginning with the lower (thallophytes), by selected types. First semester: general survey of the plant world; second semester: seed plants (spermatophytes). Each semester's work is credited separately as 2a and 2b. I, II; (5).

Dr. HAGUE

*Prerequisite:* Entrance credit in botany, or Botany 11 (for 2b, Botany 11 or 2a).

3. CYTOLOGY AND PHYSIOLOGY.—First semester; cytology and histology, with special attention to technique. Second semester: influences of external stimuli on growth and movement. Lectures; laboratory; assigned reading. (Extends through the year, but the

work of each semester is credited separately as 3a and 3b.) *I, II;* (5). Assistant Professor HOTTES

*Prerequisite:* Botany I.

4. TAXONOMY OF SPERMATOPHYTES.—Identification and classification of flowering plants. Lectures; assigned reading; laboratory; field excursions. *I;* (5). Dr. HAGUE

*Prerequisite:* Entrance credit in botany, or Botany II.

5. BACTERIOLOGY.—General principles; methods of procedure; selected forms. Lectures; recitations; laboratory work. *I or II;* (5). (Course given in the first semester is repeated in the second.)

Assistant Professor RAHN, Mr. NEWELL, Mr. LUDWIG

*Prerequisite:* Chemistry I; one year's university work, including one semester in botany or zoology.

6. BACTERIOLOGY FOR SANITARY ENGINEERS. — Bacteriological methods; water analysis and sewage. *I, last seven weeks;* (2).

Assistant Professor RAHN, Mr. NEWELL

7. PLANT PATHOLOGY.—First semester: the more important diseases of cultivated plants, their causes, and methods of prevention; second semester: methods of investigation and control. (Each semester's work credited separately as 7a and 7b.) *I, II;* (5).

Dr. BARRETT

*Prerequisite:* Botany I; 2 or 4.

8. BACTERIOLOGY.—Selected species of bacteria; investigations upon assigned subjects. *I or II;* (2-5). Assistant Professor RAHN

*Prerequisite:* Botany 5.

9. CYTOLOGY AND PHYSIOLOGY, ADVANCED COURSE.—Special laboratory problems in cytology and physiology. Critical discussions of current literature; reports on research work. *I, II;* (2-5).

Assistant Professor HOTTES

*Prerequisite:* Two years' work in botany, including Botany 3.

10. CURRENT LITERATURE.—Reports and discussions upon assigned topics and results of research work. (For advanced and graduate students.) *I, II;* (1).

11. INTRODUCTORY COURSE.—Flowering plants, their structure and activities. Lectures; laboratory; field observations; text. *I;* (5).

Assistant Professor HOTTES, Dr. ALLEE, Mr. WHITTEN, Miss PARR, Mr. BRIGHAM, Miss ATWELL, Mr. SCHERFEE

14. HEREDITY AND ORIGIN OF SPECIES.—The plant cell; the physiology of its different constituents and the parts these play in

the process of fertilization; various theories of heredity and of species formation. Lectures; demonstrations; laboratory. *I*; (3).

Assistant Professor HOTTES

*Prerequisite:* One year's work in the University; one semester in botany and zoology.

16. TAXONOMY OF SPECIAL GROUPS.—Laboratory and herbarium work; assigned reading. (The course extends through the year, but the work of each semester is credited separately as 16a and 16b.) *I, II*; (5).

Dr. BARRETT, Dr. HAGUE

*Prerequisite:* Botany 4.

#### COURSES FOR GRADUATES

After at least one year of approved botanical work graduates may elect any of the courses 3, 5, 7, 8, 9, or 10 for minor credit and any of the courses 3, 7, 8, or 9, with assigned additions for major credit towards an advanced degree.

The following are open only to graduates of liberal botanical training and may, upon approval, be elected for minor or major work.

101. CYTOLOGY.—The influence of external agents on the cell. Special subjects for investigation assigned upon consultation. Reports; discussions of current literature and research results. *Twice a week*; *I, II*.

Assistant Professor HOTTES

102. PHYSIOLOGY.—The effects of external stimuli on growth and movement. Special subjects for investigation assigned upon consultation. Reports; discussions of current literature and research results. *Twice a week*; *I, II*.

Assistant Professor HOTTES

103. BACTERIOLOGY.—Morphologic and physiological variation due to treatment; the number, validity, and relationship of species; special saprophytic or parasitic kinds of bacteria, and methods of favoring or combating their activities. *Twice a week*; *I, II*.

Assistant Professor RAHN

104. MYCOLOGY.—Selected groups of fungi. Individual assignments of subjects and problems. Field and laboratory. *Twice a week*; *I, II*.

Dr. BARRETT

106. VEGETABLE PATHOLOGY.—Diseases of plants and disease agents. Special subjects assigned upon consultation. *Twice a week*; *I, II*.

Assistant Professor RAHN, Dr. BARRETT

## CERAMICS

RAY THOMAS STULL, E.M., *Associate*

RALPH KENT HURSH, B.S., *Assistant*

BARNEY S RADCLIFFE, M.S., *Assistant*

HENRY HARRISON BARTELLS, *Research Assistant*

The courses offered by the department of ceramics are designed to give a technical knowledge of the composition and properties of raw materials used in the manufacture of clay wares, cements, and glasses, and of the physical and chemical changes which they undergo during manufacture; manual skill in the manipulation of these materials; and such knowledge of machines and the applications of power as will enable the student to acquire familiarity with the construction and operation of a manufacturing plant; to understand the peculiarities of the materials with which he is to deal; and to install such machinery and introduce such methods of manufacture as will improve the quality and reduce the cost of the wares.

For the more technical work the department occupies a new building especially designed for its needs. The lecture rooms, laboratories, kiln and furnace building, drawing rooms, and library are well equipped.

The relations of the department with the clay working interests of the State are such that investigation is as much a part of its work as is instruction. Consequently, studies of both a purely scientific and a practical nature are continually in progress. Advanced students are permitted to take part in these investigations under the direction of the instructors. Seniors and graduate students are expected to conduct investigations of their own in some line of work in which they are especially interested. (For outline of courses see pages 155 and 156.)

1. CLASSIFICATION AND PHYSICAL TESTING OF CLAYS.—The properties of clays and other ceramic materials; the identification of the varieties met in practical work. Lectures; laboratory. I; (3).

Mr. HURSH, Mr. RADCLIFFE

*Prerequisite:* Chemistry 2, 3.

2. WINNING AND PREPARATION OF CLAYS.—Commercial methods. I; (3).

Mr. RADCLIFFE

*Prerequisite:* Chemistry 5b.

3. INDUSTRIAL CALCULATIONS.—The designing and operation of furnaces, kilns, and dryers; temperature measurement. *I*; (3).

Mr. HURSCH

*Prerequisite:* Mathematics 8; Chemistry 5b; Physics 1 and 3.

4. DRYING AND BURNING.—Methods of drying and burning clay wares; types of construction of industrial kiln plants; chemical and physical processes involved. *I*; (4).

Mr. STULL

*Prerequisite:* Ceramics 5.

5. BODY MAKING.—Composition of all classes of ceramic wares; physical and chemical changes produced by the blending of the various ceramic materials; machinery and processes employed in shaping the various products. Lectures; laboratory. *II*; (5).

Mr. STULL, Mr. RADCLIFFE

*Prerequisite:* Ceramics 3.

6. GLAZES.—The production of glazes and enamels; classification; properties and defects common to each class; the effect of variation in composition; modes of application. Lectures; laboratory. *I*; (5).

Mr. STULL

*Prerequisite:* Ceramics 3, 4, 5.

8. PRINCIPLES OF GLASS MANUFACTURE.—The raw materials, preparation, compounding, melting, and shaping of glass; chemical principles involved in the manufacture and decoration of the different types of vitreous silicates. Lectures. *II*; (3).

Mr. STULL

*Prerequisite:* Ceramics 3.

9. CERAMIC CONSTRUCTION.—Plans, specifications, and estimates of ceramic construction. *II*; (5).

Mr. STULL, Mr. HURSH

*Prerequisite:* G. E. D. 2; Ceramics 3.

10. CEMENTS.—Limes, cements, plaster, sand-lime stone, and other cementing materials; composition; reactions; methods of manufacture and testing. Lectures. *I*; (3).

Mr. HURSH

*Prerequisite:* Ceramics 3.

11. THESIS.—*II*; (5).

Mr. STULL, Mr. HURSH

12. DESIGNING AND SHAPING.—Technical designing and shaping from the standpoint of the manufacturer; die construction; laying out of work; templates; master and working molds; pressing; casting; jiggering. *II*; (3).

Mr. RADCLIFFE

*Prerequisite:* Ceramics 1 or 2.

13. CEMENT LABORATORY.—The preparation of cementing substances; properties; typical reactions involved in the manufacture and use of lime, lime-sand products, pozzuolane, Sorel cement.



natural and Portland cement; the behavior of the hardened products under the influence of the various agencies to which they are subjected in use. *I; (3).* Mr. HURSH

*Prerequisite:* Ceramics 10.

14. CONTINUATION OF COURSE 13.—The production of water proof and sea water resisting cements; cement colloids; polychrome pigments for fresco decoration; cement colors; cold water paints. *II; (3).* Mr. HURSH

*Prerequisite:* Ceramics 13.

15. THE PREPARATION OF GLASS SILICATES.—Soda-lime; potash-lime; lead, barium, and zinc silicates; boro silicates; properties of the fused and solidified glasses; practical problems of the glass industry. *I; (3).*

*Prerequisite:* Ceramics 8.

16. CONTINUATION OF COURSE 15.—Opaque, colored, and optical glasses; the enameling of metals; cast iron; sheet iron; copper. *II; (3).* Mr. STULL

*Prerequisite:* Ceramics 15.

#### COURSES FOR GRADUATES

Courses open to graduates of courses other than ceramics to be taken as minors: Ceramics 3, 5, 6, 8, 10, 14.

101. THE FORMATION OF SILICATES, involving the conceptions of physical chemistry. Lectures; laboratory. *Five times a week; I.*

Mr. STULL, Mr. HURSH

102. THE TECHNOLOGY OF THE CLAY INDUSTRIES.—Mineralogical constitution of clays; plasticity and the colloidal state; adsorption; pyro-chemical and physical changes; exothermic and endothermic processes; the crystalline and amorphous state of burnt clay; thermal expansion of bodies and glazes; bodies and their interaction with glazes; the composition and constitution of glazes; dissolved and underglaze colors; translucency and opacity; the colors of rare oxides in glazes; eutectic studies; reduction and oxidation phenomena; heat radiation; conduction. *Five times a week; I, II.*

Mr. STULL

103.—TECHNOLOGY OF THE CEMENT AND MORTAR INDUSTRIES.—Fusion curves of lime, silica, lime-iron, lime-alumina, and lime-iron-alumina silicates; the action of catalyzers; crystallization of basic silicates; constitution of cement compounds; hydration and dehydration; thermal studies; colloids of hydration products; white

hydraulic cements; the factor of fineness of grain; pyro-chemical changes. *Five times a week; I, II.*

Mr. HURSH

104. THE TECHNOLOGY OF GLASS.—Fusion curves of glassy silicates; limiting compositions; solubility of the oxides in glasses; devitrification; annealing; optical properties; solubility of glass; viscosity; thermal expansion; pyro-chemical volume changes; reaction of coloring oxides; cooling curves; flashing; interaction between metal surfaces and glasses; oxidation and reduction. *Five times a week; I, II.*

Mr. STULL

## CHEMISTRY

WILLIAM ALBERT NOYES, Ph.D., LL.D., *Professor and Director*

SAMUEL WILSON PARR, M.S., *Professor*

EDWARD BARTOW, Ph.D., *Professor*

CLARENCE WILLIAM BALKE, Ph.D., *Assistant Professor*

EDWARD WIGHT WASHBURN, Ph.D., *Assistant Professor*

DAVID FORD MCFARLAND, Ph.D., *Assistant Professor*

GEORGE MCPHAIL SMITH, Ph.D., *Associate*

CLARENCE GEORGE DERICK, Ph.D., *Associate*

HENRY CHARLES PAUL WEBER, Ph.D., *Associate*

STUART JEFFERY BATES, Ph.D., *Research Associate*

ELLEN S MCCARTHY, Ph.D., *Instructor*

DUNCAN ARTHUR MACINNES, Ph.D., *Instructor*

GEORGE DENTON BEAL, Ph.D., *Instructor*

B SMITH HOPKINS, Ph.D., *Instructor*

EARLE KENNETH STRACHAN, Ph.D., *Instructor*

LAMBERT THORP, Ph.D., *Instructor*

CHARLES GEORGE MACARTHUR, M.A., *Instructor*

CARL FERDINAND NELSON, Ph.D., *Instructor*

WILHELM HIRSCHKIND, Ph.D., *Instructor*

RALPH SYDNEY POTTER, M.S., *Research Assistant*

EARL BOWMAN MILLARD, A.M., *Assistant*

GEORGE WALLACE SEARS, M.S., *Assistant*

HARVEY PEACH CORSON, M.S., *Assistant*

OLIVER KAMM, B.S., *Assistant*

JAMES EDGAR BELL, B.S., *Assistant*

HENRY LAWRENCE HUENINK, A.B., *Assistant*

HUBERT LEONARD OLIN, M.S., *Assistant*

JOHN WILLIAM READ, M.S., *Assistant*

CHARLES KAY HEWES, B.S., *Assistant*

BERT STOVER DAVISSON, A.B., *Assistant*  
RAYMOND ADAMS DUTCHER, M.S., A.M., *Assistant*  
BRONISLAV ROMAN HONOVSKI, Ph.D., *Assistant*  
ERNST KESSLER, *Assistant in Glass Blowing*  
HARPER FILER ZOLLER, B.S., *Lecture Assistant*  
PAUL STANLEY WOODWARD, B.S., *Graduate Assistant*  
ROLAND NORTON MILLER, A.B., *Graduate Assistant*  
EDWARD WALLACE ENGLE, B.S., *Graduate Assistant*  
ALBERT WAFFLE OWENS, B.S., *Graduate Assistant*  
KARL ADOLPH CLARK, A.M., *Graduate Assistant*  
GERRIT JOHN VANZOEREN, A.B., *Graduate Assistant*  
THOMAS ERNEST LAYING, A.M., *Graduate Assistant*  
CHESTER HARMON ALLEN, A.B., *Graduate Assistant*  
ERNEST ATKINS WILDMAN, B.S., *Graduate Assistant*  
RAYMOND WASHINGTON HESS, A.B., *Graduate Assistant*  
ROBERT EARL BAKER, A.B., *Graduate Assistant*  
CLINTON EDGAR GILLETTE, M.S., *Graduate Assistant*  
LAURENCE VREELAND BURTON, B.S., *Graduate Assistant*  
HENRY FRANK SCHNEIDER, A.B., *Graduate Assistant*  
ELMER TRYON EBERSOL, A.B., *Graduate Assistant*

The Department of Chemistry is organized under nine divisions as follows:

Elementary and Inorganic Chemistry

Qualitative Analysis

Quantitative Analysis, including Agricultural and Food Analysis

Organic Chemistry

Physiological Chemistry

Animal Nutrition

Physical Chemistry and Electrochemistry

Industrial Chemistry, including Metallurgy, Gas Analysis, and Assaying

Water Chemistry

Each of these divisions is equipped with rooms and apparatus for elementary, advanced, and graduate work. The nature of the work is apparent from an examination of the courses described below.

Students taking chemistry at the University are advised to give at least one year to the subject, and this should include Chemistry I

or 1a, 2, and 3. Those continuing in the second year should take Chemistry 5a and 5b, 5c or 13a. In the third year Chemistry 14 and 9, 9a, 9b, or 9c, 31, and 33 should be taken. With these, more special courses may be taken if desired, but, in general, students are not advised to take the special courses unless they have had the fundamental work represented by the selection given above. Students who desire a training for professional work in chemistry, either as teachers or in its industrial applications, will naturally take the chemical course or the course in chemical engineering.

Students who find it impossible to take more than one semester's work are requested to register for Chemistry I or 1a in the second semester rather than in the first.

1. INORGANIC CHEMISTRY.—The non-metallic elements. Alexander Smith's *General Inorganic Chemistry*. *I or II*; (5).

Professor NOYES, Assistant Professor BALKE, Dr. MCCARTHY,  
Dr. HOPKINS, Dr. NELSON

1a. INORGANIC CHEMISTRY.—Lectures; recitations; laboratory. *I or II*; (4).

Professor NOYES, Assistant Professor BALKE, Dr. MCCARTHY,  
Dr. HOPKINS, Dr. NELSON

*Prerequisite*: One year of entrance chemistry.

1b. INORGANIC CHEMISTRY.—Inorganic chemistry. Lectures; recitations; laboratory. (For students in engineering.) *I or II*; (4).

Professor NOYES, Assistant Professor BALKE, Dr. MCCARTHY,  
Dr. HOPKINS, Dr. NELSON

2. INORGANIC CHEMISTRY.—A continuation of Chemistry 1. The metallic elements; their classification, compounds, and chemical properties. Lectures; assigned text. Alexander Smith's *General Inorganic Chemistry*. *I or II*; (2).

Professor NOYES, Assistant Professor BALKE, Dr. MCCARTHY,  
\* Dr. HOPKINS, Dr. NELSON

*Prerequisite*: Chemistry 1; registration in Chemistry 3.

3. QUALITATIVE ANALYSIS.—Recitations; laboratory. *I or II*; (3).

Dr. WEBER, Dr. MCCARTHY, Dr. HOPKINS, Dr. NELSON

*Prerequisite*: Chemistry 1; registration in Chemistry 2.

4. QUALITATIVE ANALYSIS AND THE CHEMISTRY OF THE METALLIC ELEMENTS.—Class and laboratory work. (For students in engineering.) *I*; (4).

Dr. WEBER

*Prerequisite*: Chemistry 1a or 1b.

5a. ELEMENTARY QUANTITATIVE ANALYSIS.—Gravimetric and vol-

umetric analysis; stoichiometrical relations and the application of the fundamental laws of chemistry to quantitative analysis. Lectures; recitations; laboratory. Talbot's *Quantitative Chemical Analysis*. (Medical students are given special problems in the latter part of the course.) I; (5). Dr. SMITH, Dr. BEAL

*Prerequisite:* Chemistry 2, 3.

5b. QUANTITATIVE ANALYSIS.—Continuation of 5a. Methods; the analysis of silicates, metallic compounds, and alloys; advanced qualitative analysis for students in the course in chemistry and chemical engineering. Lectures; laboratory. Treadwell-Hall: *Analytical Chemistry*, Vol II. II; (5). Dr. SMITH, Dr. BEAL

*Prerequisite:* Chemistry 5a.

5c. FOOD ANALYSIS.—Quantitative organic analysis, with special reference to the examination of food and drug products: alcohols, carbohydrates, fats and oils, animal and vegetable foods, nitrogenous bodies, preservatives, and colors. Sherman's *Organic Analysis*; "Bulletin 107, rev., U. S. Bureau of Chemistry." II; (3 to 5). Dr. BEAL

*Prerequisite:* Chemistry 5a or 13a; 9 or 14.

6\*. CHEMICAL TECHNOLOGY.—Technological chemistry as illustrated in those industries having a chemical basis for their principal operations and processes; trade journals. Lectures; no laboratory. II; (2). Assistant Professor MCFARLAND

*Prerequisite:* Chemistry 5a.

7\*. METALLURGY.—Lectures; assigned reading. I; (3).

Assistant Professor MCFARLAND

*Prerequisite:* Chemistry 5a.

8. IRON AND STEEL ANALYSIS.—Analyses of all the constituents by both rapid, or technical, and standard methods. II; (3).

Dr. SMITH

*Prerequisite:* Chemistry 5b.

9. ORGANIC CHEMISTRY.—The characteristics of the more typical and simple organic compounds; the important classes of derivatives of carbon. Moore's *Organic Chemistry*. (For students of the medical preparatory course and others desiring a short course.) II; (3).

Dr. DERICK

*Prerequisite:* Chemistry 3.

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\*Certain inspection trips will be arranged in connection with courses 6 and 7. Students registered in these courses should take into consideration the expense involved, which will approximate \$15.00 for each course.

9a. ORGANIC SYNTHESIS.—Ultimate organic analysis; the preparation and study of typical organic compounds. Laboratory. *I*; (2).

Dr. DERICK, Dr. THORP, Mr. KAMM

*Prerequisite:* Chemistry 3; registration in Chemistry 14, or equivalent.

9b. ORGANIC SYNTHESIS AND ANALYSIS.—Continuation of 9a. *II*; (2).

Dr. DERICK, Dr. THORP, Mr. KAMM

*Prerequisite:* Chemistry 9a; registration in Chemistry 14, or equivalent.

9c. ORGANIC SYNTHESIS.—Typical organic compounds; the organic substances of medicinal value and of physiological importance. Laboratory. (For students in the medical preparatory course and others desiring a brief course.) *II*; (2).

Dr. DERICK, Dr. THORP, Mr. KAMM

*Prerequisite:* Chemistry 3; registration in Chemistry 9, or equivalent.

10a. WATER CHEMISTRY.—The history, sources, contamination, and standards of purity of potable waters and waters for industrial purposes. Lectures; practice in analytical methods. *II*; (3).

Professor BARTOW

10b. (A modification of 10a to meet the requirements of students in sanitary engineering, registered in connection with Chemistry 2 and 3.) *II*; (2½).

Professor BARTOW

11. RESEARCH.—Thesis embodying a thorough review of the literature of the subject; account of work done in the laboratory. The subject should be determined upon and reading begun in the junior year. A minimum of five semester hours is required. (Required for seniors.) *I, II*; (5).

Professors NOYES, PARR, BARTOW, Assistant Professors BALKE, WASHBURN, McFARLAND, Dr. SMITH, Dr. DERICK, Dr. WEBER, Dr. MCCARTHY, Dr. MACINNES, Dr. BEAL, Dr. HOPKINS, Dr. STRACHAN, Dr. THORP, Dr. MACARTHUR, Dr. NELSON, Dr. HIRSCHKIND

13a. AGRICULTURAL ANALYSIS.—Gravimetric and volumetric analysis; analysis of fertilizers and milk. Talbot's *Quantitative Chemical Analysis*. (For students in agriculture.) *I or II*; (5).

Dr. BEAL, Dr. SMITH

*Prerequisite:* Chemistry 2, 3.

13b. ADVANCED AGRICULTURAL ANALYSIS.—Applied quantitative

analysis. The analysis of fungicides, limestone, phosphate rock, fuel, and water; determination of the alkali metals; special methods of agricultural analysis. Treadwell-Hall, *Analytical Chemistry*, Vol. II. (For students who wish to specialize in agricultural chemistry or agricultural experiments.) II; (5). Dr. BEAL, Dr. SMITH

*Prerequisite:* Chemistry 5a or 13a.

14. ORGANIC CHEMISTRY.—Lectures; recitations. Noyes's *Organic Chemistry*. I, II; (3). Professor NOYES

*Prerequisite:* Chemistry 5a; should be accompanied by Chemistry 9a and 9b.

15. PHYSIOLOGICAL CHEMISTRY.—Enzymes; carbohydrates; salivary digestion; gastric digestion; fats; pancreatic-digestion; intestinal digestion; bile; putrefaction products; feces; blood; milk; epithelial and connective tissues; muscular tissue; nervous tissue; urine. Qualitative and quantitative work on gastric juice, blood, urine, and milk; the clinical aspects of these topics treated thoroughly for the prospective student of medicine. Lectures; demonstrations; conferences; practical work; assigned reading. Hammarsten's *Text Book of Physiological Chemistry*; Hawk's *Practical Physiological Chemistry*. (Open to graduates and undergraduates.) I; (5). Dr. MACARTHUR

*Prerequisite:* Two years' work in chemistry.

15a. PROBLEMS OF PHYSIOLOGICAL CHEMISTRY.—Colloids; animal oxidations; osmosis; adsorption; selective activity of cells; metabolism; activities of gastro-intestinal tract; enzymes; inorganic nutrition. Lectures; demonstrations; conferences. II; (2).

Dr. MACARTHUR

*Prerequisite:* Chemistry 15.

16. CHEMISTRY FOR ENGINEERS.—The proximate analysis of coal; determination of calorific power; technical analysis of furnace gases; examination of boiler waters; lubricating oils. (For mechanical engineers.) II; (3). Professor PARR, Dr. HIRSCHKIND

*Prerequisite:* Chemistry 1.

17. TEACHERS' COURSE.—The methods of teaching elementary chemistry. I; (1). Assistant Professor BALKE

21. QUALITATIVE ORGANIC ANALYSIS.—Systematic methods for identification of pure organic compounds and mixtures. I; (2).

Dr. DERICK

*Prerequisite:* Chemistry 9a, 9b.

22. ANIMAL CHEMISTRY (NUTRITION).—The chemical composition of animal products and feeding stuffs. Lectures; conferences; assigned reading; laboratory. *I or II*; (5). Professor GRINDLEY  
*Prerequisite:* Two years' work in chemistry.

27. QUALITATIVE ANALYSIS OF THE RARE ELEMENTS.—The rare elements and their compounds; identification and separation of the elements; formation, solubilities, and chemical reactions of their salts. Assigned reading; laboratory. *II*; (3).

Assistant Professor BALKE

*Prerequisite:* Two years' work in chemistry.

31. ELEMENTARY PHYSICAL CHEMISTRY.—Some of the more important principles and methods of physical chemistry and electrochemistry; numerous problems. Lectures; recitations. Senter's *Outlines of Physical Chemistry*. *II*; (3).

Assistant Professor WASHBURN, Dr. STRACHAN

*Prerequisite:* Chemistry 1, 2, 3; Physics 1 or 2a; Mathematics 8a.

33. ELEMENTARY PHYSICAL CHEMISTRY.—Molecular weight of gases and solutions; chemical equilibrium; the electrical conductivity of solutions and the attendant phenomena within the solution; thermochemistry. (Laboratory to accompany course 31.) *II*; (2).

Dr. MACINNES, Dr. STRACHAN

*Prerequisite:* Chemistry 5a; Physics 2b or 3.

35. ELECTROCHEMISTRY.—Electrochemistry in the industries; patents in selected industries. Lectures; recitations; laboratory; reports. Thompson's *Applied Electrochemistry*. *I*; (3 or 5.) (See also Chemistry 102b.)

Dr. MACINNES

*Prerequisite:* Chemistry 32, 33.

61. INORGANIC PREPARATION.—The preparation of chemical products from raw materials; manufacture and testing of pure chemicals; fractionation; other processes of the manufacturing chemist. Laboratory. *II*; (2).

Assistant Professor MCFARLAND

*Prerequisite:* Chemistry 5a.

65. TECHNICAL GAS AND FUEL ANALYSIS.—Examination of gases, gas mixtures, flue gases, and fuels; determination of calorific values; calculation of efficiencies. *I*; (2). Professor PARR, Dr. HIRSCHKIND

*Prerequisite:* Chemistry 5a.

66. TECHNOLOGY OF GASES.—The manufacture, constituents, and uses of the various forms of gaseous fuel; calorimetry; photometry;



the more usual methods of analysis. Lectures; reading; reports; laboratory. *II*; (1). Professor PARR

*Prerequisite:* Chemistry 65.

68a. ANALYSIS OF GLASSES AND GLAZES.—Special problems connected with the pottery industry. (For students in ceramics.) *I*; (3). Dr. SMITH

*Prerequisite:* Chemistry 5b.

68b. CEMENT CHEMISTRY.—The analysis of cements; cement materials; pottery bodies. (For students in ceramics.) *I*; (3). Dr. SMITH

*Prerequisite:* Chemistry 5b.

69. ASSAYING.—The fire assay of lead, gold, and silver ores. Fluxes; reagents; charges; typical ores; practice in use of the crucible and muffle furnaces and in the manipulations connected with fire assaying. *I*; (2). Assistant Professor McFARLAND

*Prerequisite:* Chemistry 5a and Geology 5.

70. ADVANCED ASSAYING AND ORE TESTING.—The assay of ores of platinum, tin, copper; bullion assay; free milling, amalgamation, and cyaniding tests. (A continuation of Chemistry 69.) *II*; (2). Assistant Professor McFARLAND

*Prerequisite:* Chemistry 69.

71. WET METHODS OF ASSAY.—Technical methods for copper, lead, zinc, antimony, arsenic, tin in ores and metallurgical products. Laboratory. *I*; (2). Assistant Professor McFARLAND

*Prerequisite:* Chemistry 5b.

72. PAINTS, OILS, TURPENTINES, VARNISHES, AND PROTECTIVE COVERINGS FOR WOOD AND METALS.—Lectures and laboratory. *II*; (-). Professor PARR

*Prerequisite:* Chemistry 5b, 14.

73. ASPHALT, TAR, AND OIL RESIDUES.—Their sources, characteristics, composition, and examination; binders, dust preventatives, etc., used in road construction. (For students in highway engineering.) *II*; (2). Professor PARR

*Prerequisite:* Chemistry 3 or 4.

76. CALORIMETRY OF FUELS.—Methods for determining the heat values of solid, liquid, and gaseous fuels. (An advanced course.) *I, II*; (1-3). Professor PARR

77. COMPOSITION AND CLASSIFICATION OF COAL.—Classification,

changes in composition, weathering, spontaneous combustion, formation of mine gases. Lectures; assigned reading. *II*; (1).

Professor PARR

78. METALLOGRAPHY.—Constitution and microstructure of metals and alloys and the relations between their properties, chemical and mechanical treatment, and structure. Lectures; reading; and laboratory. *II*; (2).

Assistant Professor McFARLAND

93. JOURNAL MEETING.—(For juniors, seniors, and graduates.) *I, II*; (1). All members of the teaching staff in the chemical department.

For Juniors, Dr. DERICK

For Seniors, Assistant Professor McFARLAND

#### COURSES FOR GRADUATES

Graduate students whose major subject is in some department other than chemistry, before taking graduate work for credit in this department, must have had the equivalent of 15 university credits in chemistry, and the work covered must have included satisfactory work in general chemistry and in qualitative and quantitative analysis. Such students are advised to take Chemistry 31, 33, 102, 102a, 5b, 5c, 14, 9a and 9b. Courses of a more special nature will not, as a rule, be accepted for graduate work unless preceded by one of the above courses.

For students in agriculture, Chemistry 5a and 13a will not be accepted for graduate credit.

Graduate students who are candidates for an advanced degree in chemistry must have had the equivalent of 30 university credits in chemistry, and this must include satisfactory courses in general chemistry, qualitative and quantitative analysis, physical chemistry, and organic chemistry. Before receiving the degree of Doctor of Philosophy such students are expected to complete work equivalent to courses 31, 33 (or 102 and 102a), 14, 9a, 9b, 101, and 111. They are advised to take at least brief courses in gas analysis, iron and steel analysis, water analysis, assaying, and chemical technology.

For students in chemistry, 5a, 13a, 9, and 9c will not be accepted for graduate credit and 9a, 9b, 14, 31 and 33 will be accepted only from students entering the Graduate School with the equivalent of 30 university credits in chemistry.

[101. HISTORY AND THEORIES OF CHEMISTRY.—*Twice a week*; *I*.  
Not given in 1912-13. Dr. SMITH]

102. ADVANCED PHYSICAL CHEMISTRY.—*Twice a week*; *I, II*.

(This course and course 102a are intended to cover a period of two years.) Assistant Professor WASHBURN

*Prerequisite:* Chemistry 1, 2; Physics 1, 3; Mathematics 8a or 7 and 9. An elementary knowledge of organic and physical chemistry is desirable.

[102a. ADVANCED PHYSICAL CHEMISTRY.—Chemical equilibrium; the Phase Rule; certain portions of thermochemistry; photochemistry; the thermodynamics of electrochemistry. (A continuation of 102, with which it alternates.) Nernst's *Theoretical Chemistry*. *Twice a week; I, II*. Not given in 1912-13.

Assistant Professor WASHBURN

*Prerequisite:* The same as course 102.]

102b. ADVANCED ELECTROCHEMISTRY.—The modern theories of solution and the principles of thermodynamics in their application to the problems of electrochemistry; electrolytic conductivity and transference; electro-motive force; the energy principles underlying the transformation of chemical and electrical energy; the recent advances in the electrolysis of fused electrolytes and the applications of electricity to gaseous reactions at high temperature. Le-Blanc's *Electrochemistry*. *Three times a week; II*. Dr. MACINNES  
(Open to undergraduates having the necessary preparation.)

*Prerequisite:* Chemistry 31, 33; Mathematics 8a or 7 and 9.

102c. ADVANCED PHYSICAL AND ELECTROCHEMISTRY.—The applications of physico-chemical methods to special problems. Laboratory. *Twice a week; I*. Assistant Professor WASHBURN

*Prerequisite:* Chemistry 31, 33; registration in Chemistry 102b, or completion of Chemistry 102, 102a, or 102b; Mathematics 8a or 7 and 9.

102d. ELECTROCHEMISTRY.—Theoretical and applied electrochemistry, with emphasis on the technical side of the subject. (For students of electrical engineering.) *Once a week; I, II*.

Dr. MACINNES

102e. SPECIAL TOPICS IN PHYSICAL CHEMISTRY.—Seminar. Subject for 1912-13: Relations Between Chemical Constitution and Physical Properties. Smile's *Chemical Constitution and Physical Properties*. *Once a week; I*. Assistant Professor WASHBURN

*Prerequisite:* Chemistry 102 or 102a.

103. ADVANCED INORGANIC CHEMISTRY.—Descriptive inorganic chemistry; the rarer elements; the periodic system. Lectures, with or without laboratory. *Two to five times a week; I, II*.

Assistant Professor BALKE

103a. ADVANCED ANALYTICAL CHEMISTRY.—Special topics. Lectures, with or without laboratory. *One to five times a week; II.*

Dr. SMITH

103b. SPECIAL TOPICS IN INORGANIC CHEMISTRY.—Seminar. Werner's *Neuere Anschauungen auf dem Gebiete der anorganischen Chemie*. *Once a week; I, II.*

Dr. SMITH

104. ADVANCED ORGANIC CHEMISTRY.—Seminar. Kekule's linking theory, stereochemistry, steric hindrance, molecular rearrangements, tautomerism, condensation, carbohydrates, ureids. Special attention to the application of modern physical chemistry to the study of organic problems, especially the application of chemical kinetics to tautomerism and the application of physical properties to the determination of chemical structure. Lectures; discussions. *Twice a week; I, II.*

Dr. DERICK

[104a. ADVANCED ORGANIC CHEMISTRY.—(Continuation of 104, with which it alternates.) *Twice a week; I, II.* Not given in 1912-13.]

Dr. DERICK]

105. ADVANCED PHYSIOLOGICAL CHEMISTRY.—Selected portions of physiological chemistry not covered by Chemistry 15. *Three times a week; II.*

Dr. MACARTHUR

105a. ADVANCED PHYSIOLOGICAL CHEMISTRY.—Special investigations. Laboratory. *Two to seven times a week; II.*

Dr. MACARTHUR

105b. ADVANCED PHYSIOLOGICAL CHEMISTRY.—Recent contributions of importance in the field of physiological chemistry. *Once a week; I, II.*

Dr. MACARTHUR

106. ANIMAL CHEMISTRY (NUTRITION).—The recent advances in the chemistry of nutrition of the lower animals; the chemistry of the functional products: the flesh, fat, milk, and wool of the more common domesticated animals. Lectures; conferences; assigned reading; laboratory. *Five times a week; I, II.*

Professor GRINDLEY

*Prerequisite:* Two years' work in chemistry.

107. CALORIMETRY.—Standards and methods. *One to three times a week; I, II.*

Professor PARR

108. METALLOGRAPHY.—The constitution and microstructure of metals and alloys; the relations between their properties, chemical and mechanical treatment, and structure. Lectures; reading, laboratory. *Twice a week; II.*

Assistant Professor MCFARLAND

*Prerequisite:* Chemistry 7.

110. WATER SUPPLIES.—The sources of contamination of water supplies and the purification of water for potable or technical use. *Five times a week; I, II.* Professor BARTOW

111. THESIS WORK.—A thesis will usually be required of students taking the Master's degree and will always be required of students taking the degree of Doctor of Philosophy. (For a description of undergraduate work leading to a thesis, see Chemistry II.)

Work may be taken in the following subjects:

PHYSICAL AND ELECTROCHEMISTRY

Assistant Professor WASHBURN

INORGANIC CHEMISTRY

Assistant Professor BALKE, Dr. SMITH, Dr. WEBER

ANALYTICAL CHEMISTRY

Dr. SMITH

FOOD CHEMISTRY

Dr. BEAL

ORGANIC CHEMISTRY Professor NOYES, Dr. DERICK, Dr. THORP

WATER CHEMISTRY

Professor BARTOW

ANIMAL CHEMISTRY (Animal Nutrition) Professor GRINDLEY

PHYSIOLOGICAL CHEMISTRY

Dr. MACARTHUR

INDUSTRIAL CHEMISTRY

Professor PARR, Assistant Professor McFARLAND

## CIVIL ENGINEERING

IRA OSBORN BAKER, C.E., D. Eng., *Professor*

FRANK OLIVER DUFOUR, C.E., *Assistant Professor, Structural Engineering*

CHARLES WESLEY MALCOLM, C.E., *Assistant Professor, Structural Engineering*

ALLEN BOYER McDANIEL, B.S., *Assistant Professor*

JAMES ELMO SMITH, C.E., *Associate*

CARROLL CARSON WILEY, C.E., *Instructor*

GEORGE WELLINGTON PICKELS, JR., C.E., *Instructor*

NEAL BRYANT GARVER, C.E., *Instructor*

WILLIAM HORACE RAYNER, B.S., *Instructor*

RAYMOND EARL DAVIS, B.S., *Instructor*

I. ROADS AND PAVEMENTS.—Road improvement in country highways; means of securing it; construction of earth, gravel, and macadam roads; methods of construction, cost, durability, and desirability of the various kinds of pavement; grades; cross-sections;

assessment of cost; maintenance and cleaning. Baker's *Roads and Pavements*. II; (2). Mr. WILEY

*Prerequisite:* Mathematics 4; General Engineering Drawing 1, 2; Civil Engineering 21, 22, 23.

4. RAILROAD SURVEYING.—The principles of economic location and the construction of railways; railway appliances and maintenance-of-way practice. Field practice: Preliminary and location surveys of a line of railroad of sufficient length to secure familiarity with the methods of actual practice. Each student makes a complete set of notes, maps, profiles, calculations, and estimates. Nagle's *Field Manual for Railroad Engineers*. I; (5).

Mr. SMITH, Mr. WILEY

*Prerequisite:* Civil Engineering 21, 22, 23.

4a. RAILROAD SURVEYING.—The first eleven weeks of course 4, for students in municipal and sanitary engineering. I; (3).

5r. MASONRY CONSTRUCTION.—Baker's *Masonry Construction*. I; (4). Professor BAKER, Assistant Professor McDANIEL

*Prerequisite:* Theoretical and Applied Mechanics 7, 8, 9, 10; Civil Engineering 20.

5l. CEMENT LABORATORY PRACTICE.—Waterbury's *Cement Laboratory Manual*. I; (1). Assistant Professor McDANIEL

*Prerequisite:* Theoretical and Applied Mechanics 7, 8, 9, 10; Civil Engineering 20; registration in 5r.

6. MASONRY AND REINFORCED CONCRETE DESIGN.—The design of reinforced-concrete beams, columns, slabs; arches, dams, retaining walls; masonry structures. II; (2).

Assistant Professor McDANIEL, Mr. SMITH

*Prerequisite:* Civil Engineering 5.

6a. THEORY AND DESIGN OF REINFORCED CONCRETE.—(For students in architectural engineering, municipal and sanitary engineering, and railway civil engineering.) II; (2).

Assistant Professor DUFOR, Mr. GARVER

*Prerequisite:* Civil Engineering 5, or Architecture 5.

10. SURVEYING.—Areas with chains and compass; U. S. public land surveys; principles of re-establishing corners; use of transit in finding distances, areas, and in laying out buildings; use of the level in finding profiles and contours. (For students in architecture, architectural engineering, electrical engineering, and mechanical engineering.) Pence and Ketchum's *Surveying Manual*; II; (2).

Mr. WILEY

*Prerequisite:* Mathematics 4; General Engineering Drawing 1, 2; Physics 1, 3.

12. BRIDGE ANALYSIS.—The computation of the stresses in the various forms of bridge trusses, by algebraic and graphic methods, under different conditions of loading. Dufour's *Bridge Engineering, Part One. I*; (2). Assistant Professor DUFOUR, Mr. GARVER

*Prerequisite:* Theoretical and Applied Mechanics 7, 8, 9, 10; and for civil engineering students, Civil Engineering 20, and for architectural engineering students, Architecture 5.

13. BRIDGE DETAILS.—Inspection of a highway bridge; computation of weight and critical investigation of a highway bridge from detailed shop-drawings; detailed estimate of cost; standard details for bridges. *I*; (2). Assistant Professor MALCOLM, Mr. GARVER

*Prerequisite:* Civil Engineering 12.

14. BRIDGE DESIGN.—Individual design of a railroad plate girder and a truss span, with sections proportioned and details worked out, followed by a complete set of drawings. Dufour's *Bridge Engineering, Part Two. II*; (5).

Assistant Professor MALCOLM, Mr. GARVER

*Prerequisite:* Civil Engineering 12, 13.

14a. BRIDGE DESIGN.—Part of course 14 above, for railway civil engineering students. *II*; (2). Assistant Professor MALCOLM

14b. BUILDING DESIGN.—Design of steel-frame office buildings; estimate of cost. (For architectural engineering students.) *II*; (2). Assistant Professor MALCOLM

*Prerequisite:* Civil Engineering 12, 13.

15. ADVANCED BRIDGE ANALYSIS.—The computations of stresses and deflections of continuous, draw, cantilever, suspension, and metal-arch bridges; the statically-indeterminate stresses of framed structures. Merriman and Jacoby's *Roofs and Bridges, Part Four. II*; (2). Assistant Professor DUFOUR

16. ENGINEERING CONTRACTS AND SPECIFICATIONS.—The law of contract; examples of general and technical clauses used in engineering specifications. Johnson's *Engineering Contracts and Specifications. II*; (2).

Assistant Professor DUFOUR, Mr. SMITH, Mr. GARVER

*Prerequisite:* Civil Engineering 5, 12, 13; Municipal and Sanitary Engineering 2, 3.

18. THEORY OF REINFORCED CONCRETE.—Study of result of experiments. *I*; (1). Assistant Professor DUFOUR

*Prerequisite:* Mechanical Engineering 1, 11; Chemistry 1; Physics 1, 3; Theoretical and Applied Mechanics 7, 8, 9, 10; Civil Engineering 5, 12, 13.

20. GRAPHIC STATICS.—Elements of graphic statics; determination of stresses in roof and bridge trusses and in the braced bent. Malcolm's *Elements of Graphic Statics*. II; (2).

Mr. SMITH, Mr. GARVER

*Prerequisite:* Mathematics 2, 4, 6; Theoretical and Applied Mechanics 7, 8, 9, 10; General Engineering Drawing 1, 2.

21. SURVEYING.—The theory, use, and adjustment of the compass, level, transit, plane table, and sextant. Field work; the determination of distances by pacing and with the chain and tape; the determination of areas with the compass, transit, and plane table; profile leveling. The U. S. land survey methods, and court decisions relating to the re-establishment of corners, boundaries, partition of land, interpretation of deeds, and in city and farm surveying. Tracy's *Plane Surveying*; Pence and Ketchum's *Surveying Manual*. I; (5).

Mr. PICKELS, Mr. RAYNER, Mr. DAVIS

*Prerequisite:* General Engineering Drawing 1, 2; Mathematics 4.

22. TOPOGRAPHIC SURVEYING.—The theory and use of the stadia and other instruments used in making a topographic survey; methods; topographic drawing; a complete topographic survey based on a system of triangulation including the calculations, and platting and completing the map; precise measurement of bases and angles. Tracy's *Plane Surveying*; Pence and Ketchum's *Surveying Manual*. II; (4).

Mr. PICKELS, Mr. RAYNER, Mr. DAVIS

*Prerequisite:* Civil Engineering 21; General Engineering Drawing 1, 2; Mathematics 4.

23. RAILROAD CURVES.—The geometry of the circle as applied to railroad curves; the methods of locating curves in the field. Nagle's *Field Manual for Railroad Engineers*. II; (1).

Mr. PICKELS, Mr. RAYNER, Mr. DAVIS

*Prerequisite:* Civil Engineering 21, 22; General Engineering Drawing 1, 2; Mathematics 4. Taken with C. E. 22.

24. METAL STRUCTURES.—The design and calculation of stresses in mill and steel-skeleton buildings. I; (1).

Assistant Professor MALCOLM

*Prerequisite:* Civil Engineering 12, 13, 20.

25. SEMINAR.—Reading and discussion of papers. Each student



presents one major and two minor papers upon assigned topics, and participates in the discussion of other papers. *II; (1).*

Professor BAKER

*Prerequisite:* Full senior standing in Civil Engineering.

30. THESIS.—First semester: Preliminary work, with weekly conferences; second semester: Specified hours for work and conferences. *I; (1); II; (2).* Instructor assigned by Professor BAKER

*Prerequisite:* Full senior standing in Civil Engineering.

#### COURSES FOR GRADUATES

Entrance upon graduate work in civil engineering presupposes the full undergraduate course in that subject.

107. BRIDGE DESIGN.—The determination of the stresses in swing, cantilever, and suspension bridges; structural details; shop equipment; methods of fabrication. Inspection of and report upon bridge shops or work in progress. *Three times a week; I or II.*

Assistant Professor DUFOR

110. METALLIC BUILDING CONSTRUCTION.—The design of the metal skeleton of buildings for various purposes. Conferences, problems, and inspection of construction work in progress. *Three times a week; I or II.*

Assistant Professor MALCOLM

115. REINFORCED-CONCRETE DESIGN. — The materials, design, forms, and erection of reinforced-concrete structures. *Three times a week; I or II.*

Assistant Professor McDANIEL

#### THE CLASSICS

HERBERT JEWETT BARTON, A.M., *Professor, Chairman*

CHARLES MELVILLE MOSS, Ph.D., *Professor*

WILLIAM ABBOTT OLDFATHER, Ph.D., *Associate Professor*

ARTHUR STANLEY PEASE, Ph.D., *Assistant Professor*

HOWARD VERNON CANTER, Ph.D., *Associate*

#### *Majors*

The requirements for a major in the classics have been defined as follows:

A major in the classics shall consist of 30 hours in Greek and Latin, of which at least 12 shall be in the secondary language, and the remaining hours in the primary language. Only those courses may count toward the major in the classics which count toward a major in Latin and Greek respectively.

A major in Greek consists of 24 hours, not including Greek 1, 17, 18, 19.

A major in Latin consists of 24 hours, not including Latin 12. Latin 1 may be counted for half credit only.

### Honors

For honors in Greek the major shall be the ordinary one of 24 hours, as defined above; the minor shall be Latin and one other foreign language, or history, or philosophy, or English literature. Neither minor shall consist of less than 9 hours, and the two together must aggregate not less than 24 hours. No course may be counted toward these minors which is not counted toward a major by the department concerned.

For honors in Latin the major shall consist of 24 hours and shall include Latin 14 and 16; the minor shall be at least one other foreign language, preferably Greek, and one of the following: English literature, a modern language, history, or philosophy, with the same conditions as in the case of Greek.

## GREEK

### COURSES FOR UNDERGRADUATES

Courses 1 to 4 inclusive are designed to meet the needs of students who cannot present Greek for entrance and yet wish to study the language.

1. BEGINNING GREEK: Grammar and Reader.—Xenophon's *Anabasis*, book I. I, II; (4). Dr. CANTER

2. NEW TESTAMENT GREEK.—I, II; (2). Professor MOSS

3. XENOPHON.—*Anabasis*, books II-IV. I; (3).

Associate Professor OLDFATHER

*Prerequisite:* Greek 1.

4. HOMER.—Six books of the *Iliad*. II; (3).

Associate Professor OLDFATHER

*Prerequisite:* Greek 3.

5. HERODOTUS: THE LYRIC POETS.—I; (3). Professor MOSS

*Prerequisite:* Greek 4.

6. THUCYDIDES.—Books VI-VII. II; (3).

Assistant Professor PEASE

*Prerequisite:* Greek 5 or 7.

[7. THE DRAMA.—I; (3). Not given in 1912-13.

Professor MOSS

*Prerequisite:* Greek 4.]

- [8. PLATO.—Selected dialogues, including *Phaedo*; the *Apology*.  
*II*; (3). Not given in 1912-13. Professor Moss

*Prerequisite*: Greek 5 or 7.]

14. ADVANCED GREEK PROSE COMPOSITION.—*II*; (1).

Professor Moss

*Prerequisite*: Greek 6 or 8.

#### GREEK LIFE AND LITERATURE IN ENGLISH

(Courses 16-20 presuppose no knowledge of Greek and are open to all students except freshmen.)

16. THE PRIVATE AND PUBLIC LIFE OF THE GREEKS.—Lectures illustrated by photographs and slides; prescribed readings. *I*; (1).

Professor Moss

17. GREEK POETRY IN TRANSLATIONS.—*I*; (2). Professor Moss

19. GREEK DRAMA IN TRANSLATIONS.—*II*; (2). Professor Moss

20. HISTORY OF GREECE.—*I*; (3). (This course is described by the department of history as History 5.)

Associate Professor OLDFATHER

*Prerequisite*: One course in history or the classics.

#### COURSE FOR ADVANCED UNDERGRADUATES AND GRADUATES

21. BEGINNING GREEK.—Elementary composition and grammar; lectures on Greek literature. *I, II*; (4). Professor Moss

#### COURSES FOR GRADUATES

Preparation for graduate work in Greek should include two years of college Greek in addition to entrance requirements.

103. PRINCIPLES OF COMPARATIVE GRAMMAR.—This course may be counted either for Greek or Latin credit. *Three times a week*; *I*.

Dr. CANTER

104. HOMER AND THE HOMERIC QUESTION.—*Twice a week*; *I, II*; (Alternates with 105.)

Associate Professor OLDFATHER

- [105. PLATO AND ARISTOTLE.—*Twice a week*; *I, II*. Not given in 1912-13.

Associate Professor OLDFATHER]

106. GREEK DRAMA.—*Twice a week*; *I, II*. Professor Moss

- [107. GREEK ORATORY.—*Twice a week*; *I, II*. Not given in 1912-13.

Professor Moss]

#### LATIN

##### FIRST-YEAR COURSES

1. PLINY AND VERGIL.—Selections from Pliny's *Letters* and the *Aeneid*. *I, II*; (4). Assistant Professor PEASE, Dr. CANTER

*Prerequisite*: Three entrance units in Latin.

2. LIVY, PLAUTUS, AND TERENCE.—Selections from Livy; the *Captivi* of Plautus; the *Phormio* of Terence. I, II; (4).

Professor BARTON

*Prerequisite:* Four entrance units in Latin.

#### SECOND-YEAR COURSES

3. SALLUST AND CICERO.—Selections from the *Jugurthine War*; *De Senectute*. I; (3).

Dr. CANTER

*Prerequisite:* Latin 2.

4. CATULLUS AND HORACE.—Selections from the lyrics of Catullus and the *Odes* of Horace. II; (3).

Professor BARTON

*Prerequisite:* Latin 2.

5. LATIN COMPOSITION.—Grammatical drill; practice in the simpler forms of expression. I, II; (1).

Dr. CANTER

*Prerequisite:* Latin I or its equivalent.

#### ROMAN LIFE AND LITERATURE IN ENGLISH

(Courses 12 and 13 presuppose no knowledge of Latin; open to all students except freshmen.)

12. VERGIL AND HORACE IN ENGLISH TRANSLATIONS.—I; (1).

Professor BARTON

13. ROMAN LIFE.—The family; amusements; education; morals; society; monuments. Lectures, illustrated by photographs and slides. II; (1).

Professor BARTON

19. ROMAN HISTORY.—II; (3). (This course is described by the department of history as History 6.)

Dr. CANTER

*Prerequisite:* One course in history or the classics.

#### COURSES FOR ADVANCED UNDERGRADUATES

7. HORACE AND JUVENAL.—Selections from the *Satires* and *Epistles* of Horace; selected *Satires* of Juvenal. I; (3).

Assistant Professor PEASE

*Prerequisite:* 12 hours' credit in Latin.

8. TACITUS.—The *Annals*, books I-VI. II; (3).

Assistant Professor PEASE

*Prerequisite:* 12 hours' credit in Latin.

9. TEACHERS' COURSE.—The purpose and methods of preparatory Latin instruction; the teacher's preparation. II; (2).

Professor BARTON

*Prerequisite:* 18 hours' credit in Latin. A portion of this requirement may be waived for those who have taught Latin.

10. LATIN COMPOSITION.—The leading principles; imitation of assigned models. *I; (2).* Professor BARTON

*Prerequisite:* 12 hours' credit in Latin, including Latin 5 or its equivalent.

COURSES FOR ADVANCED UNDERGRADUATES AND GRADUATES

14. SENECA.—Selections from his letters and tragedies. *I; (3).* Professor BARTON

*Prerequisite:* 18 hours' credit in Latin.

16. MARTIAL AND SUETONIUS.—Selections. *II; (3).* Associate Professor OLDFATHER

*Prerequisite:* 18 hours' credit in Latin.

COURSES FOR GRADUATES

Students desiring to take graduate work in Latin should have had at least three years of college Latin in addition to the Latin presented to meet entrance requirements.

101. PRINCIPLES OF COMPARATIVE GRAMMAR.—(The same as Greek 103.) *Three times a week; I.* Dr. CANTER

103. CICERO.—*De Natura Deorum* and *De Divinatione*. *Twice a week; I.* Assistant Professor PEASE

104. PALAEOGRAPHY.—*Once a week; I.* Assistant Professor PEASE

[105. LATIN POETRY.—*Twice a week; II.* Not given in 1912-13. Assistant Professor PEASE]

106. LATIN COMEDY.—*Twice a week; I, II.* Associate Professor OLDFATHER

107. EPIGRAPHY.—*Twice a week; II.* Assistant Professor PEASE

108. TACITUS.—*The Histories*. *Twice a week; II.* Professor BARTON

109. VERGIL.—*Twice a week; II.* Assistant Professor PEASE

110. SEMINAR.—*Once a week; I, II.* Associate Professor OLDFATHER, Assistant Professor PEASE, and other members of the department

COMMERCIAL LAW

(See ECONOMICS and ACCOUNTANCY.)

## DAIRY HUSBANDRY

- WILBUR JOHN FRASER, M.S., *Professor, Dairy Husbandry*  
 NELSON WILLIAM HEPBURN, M.S., *Associate, Dairy Manufactures*  
 ROYDEN EARL BRAND, M.S., *Associate, Dairy Husbandry*  
 HORATIO NEWTON PARKER, *Instructor, Municipal and Sanitary Dairy-  
 ing*  
 LEROY LANG, M.S., *Instructor, Dairy Manufactures*  
 WILLIAM TRUMAN CRANDALL, B.S., *Instructor, Milk Production*  
 RAY STILLMAN HULCE, B.S.A., *Assistant, Milk Production*  
 OLIVER ARNOLD KELLER, B.S., *Assistant, Dairy Manufactures*  
 HARRISON AUGUST RUEHE, B.S., *Assistant, Dairy Manufactures*  
 FRANK ASHMORE PEARSON, B.S., *Assistant, Dairy Husbandry*  
 WILLIAM FIRTH WELLS, B.S., *Assistant, Municipal Dairying*

## COURSES FOR UNDERGRADUATES

City Milk Supply: Dairy Husbandry 8, 11

Dairy Cattle: Dairy Husbandry 2, 16, 17, 21

Manufactures: Dairy Husbandry 1, 3, 7, 19, 22

1. ADVANCED MILK TESTING.—Official testing; inspectors' methods; tests for purity and adulteration; lactometer; acid tests; tests for preservatives; butter analysis; moisture, salt, and fat tests; Lectures; assigned readings; laboratory practice. (Alternates with Dairy Husbandry 16 if desired.) *I*; (3). Mr. HEPBURN, Mr. LANG

2. DAIRY CATTLE.—Dairy type and its relation to milk and butter fat production; origin and history of breeds, their characteristics, type and adaptability to the various markets and climatic conditions; use of breed score card; prominent families and individuals in principal herds; herd improvement; selection of animals on performance and breed records and physical conformation; grading up by use of superior sires. Lectures; recitations; judging. *I*; (5).

Mr. CRANDALL

3. ELEMENTS OF MILK TESTING.—The composition of milk and milk products; milk and cream testing; care of milk and cream on the farm. Lectures on the use of the hand separator. *I, II*; (1).

Mr. HEPBURN, Mr. LANG, Mr. RUEHE

7. BUTTER MAKING AND FACTORY MANAGEMENT.—Cream receiving and ripening; pasteurization; use of commercial starters; churning, salting, working, and marketing of butter; butter scoring; separators; special problems for the manufacture of butter; private and co-operative management of creameries; centralizers' sys-

tems; creamery accounting and business methods; refrigerating; ice cream making; location and planning of creamery buildings. Lectures; assigned readings; laboratory practice. *II*; (5).

Mr. HEPBURN

*Prerequisite:* Dairy Husbandry 1.

8. CITY MILK SUPPLY.—Producing and marketing clean milk for public consumption; sanitation of the dairy barn and milk house; scoring and inspection of dairies; standardization, bottling, transportation, and delivery of milk; communicable disease; value of milk as a food; milk beverages; certified milk; milk commissions; legal regulations of cities and states. (Alternates with Dairy Husbandry 11 if desired.) *II*; (3).

Mr. PARKER

*Prerequisite:* Dairy Husbandry 1.

11. DAIRY BACTERIOLOGY.—The relation of bacteria to the dairy industry; changes commonly effected in milk by bacteria; market milk; inspected milk; certified milk; pasteurized milk; bacteria characteristic of different groups; bacteria producing milk of unusual character; preserved milks; butter; oleomargarine; cheese. (Alternates with Dairy Husbandry 8 if desired.) *II*; (3).

Mr. PARKER

*Prerequisite:* Dairy Husbandry 1; Botany 5 or 12.

12. INVESTIGATION AND THESIS.—Professor FRASER, Mr. HEPBURN, Mr. PARKER

16. FEEDING DAIRY CATTLE.—Compounding rations for dairy cows; preparation of feeds; study of station feeding tests; effect of feeds on milk products; calf raising, feeding, and general care; barn arrangement for storage and feeding; types of mangers; silos, location and types. Opportunity given to study the feeding of the University dairy herds as well as the working of the types of silos in use. (Alternates with Dairy Husbandry 1 if desired.) *I*; (3).

Professor FRASER, Mr. HULCE

*Prerequisite:* Dairy Husbandry 3 and Animal Husbandry 5, or their equivalents.

17. ADVANCED STUDY OF DAIRY BREEDS.—Origin and history; detailed history of prominent families and noted individuals, their characteristics and producing abilities; pedigree work and performance records; advanced registry systems; problems peculiar to the breeder of pure-bred dairy cattle. Lectures; assigned readings; seminar work. *II*; (2).

Mr. CRANDALL

*Prerequisite:* Dairy Husbandry 16, 3.

19. FARM DAIRYING.—Systems of creaming milk; the care and use of the hand separator; the various makes of machines; farm buttermaking; ripening cream; churning, working, and marketing butter on the farm. *I*; (2). Mr. HEPBURN, Mr. LANG, Mr. RUEHE

*Prerequisite:* Dairy Husbandry 1.

21. SYSTEMS OF DAIRY FARMING.—Relation of the cow and the herd to profits; how to establish and perpetuate a dairy herd of the highest efficiency; economy of crops and rations; systems of cropping; organization of farm; location and arrangement of buildings and lots; farm accounts, records, and inventories; markets; care and disposal of milk at the greatest profit. *II*; (5).

Professor FRASER, Mr. BRAND

*Prerequisite:* Dairy Husbandry 2, 16.

22. CHEESE MAKING.—Ripening and setting milk; cutting, cooking, and dipping curd; cheddaring, milling, matting, and salting curds; pressing and curing cheese; the different varieties of cheese; practice in making more common varieties. *I*; (3).

Mr. LANG, Mr. RUEHE

*Prerequisite:* Dairy Husbandry 1.

#### COURSES FOR GRADUATES

101. ECONOMIC MILK PRODUCTION.—Differences in the efficiency of dairy cows, cause and effect of the same, and the relation this bears to successful dairy farming. *Twice a week; I, II.*

Professor FRASER

102. RESEARCH.—The investigation in progress in the dairy herds of the state. *Twice a week; I, II.*

Professor FRASER

#### DRAWING, GENERAL ENGINEERING

HARVEY WILLARD MILLER, M. E., *Associate*

ROBERT KENT STEWARD, C.E., *Instructor*

FRANCIS MARION PORTER, M.S., *Instructor*

HAROLD ORDWAY RUGG, C.E., *Instructor*

HARVEY HERBERT JORDAN, B.S., *Instructor*

ROY RUDY CARTER, B.S., *Assistant*

WALTER STEPHEN NELSON, *Half-time Assistant*

1. ELEMENTS OF DRAFTING.—Lettering; isometric oblique and perspective drawing; orthographic projection; machine sketching; working drawings. Lettering: mechanical styles and the making of name plates and titles for mechanical drawings. Mechanical draw-



ing: 12 plates from copy, with tracings of each, and 6 plates from models, with tracings of each. Dimensioned sketches from parts of standard machines, followed by complete working drawings. Tracings duplicated in blue-print form. Time sketches of the equipment in the shops and laboratories; Miller & Steward's *Plate Specifications*. I; (4).

Mr. MILLER, Mr. STEWARD, Mr. PORTER, Mr. RUGG, Mr. JORDAN,  
Mr. CARTER, Mr. NELSON

2. DESCRIPTIVE GEOMETRY.—The point, line, and plane; the properties of surfaces; intersections and developments. (For architects, perspective instead of intersections and developments.) Practical problems. Recitations precede the work in the drawing room at each period. Three drawing room plates, 2 hours each, 5 problems per plate, and 2 home plates, 5 problems each, constitute each week's work. Miller's *Descriptive Geometry*. II; (4).

Mr. MILLER, Mr. STEWARD, Mr. PORTER, Mr. RUGG, Mr. JORDAN,  
Mr. CARTER, Mr. NELSON

*Prerequisite:* Solid geometry, college algebra, plane trigonometry.

## ECONOMICS

(Including ACCOUNTANCY)

(See also HISTORY, POLITICAL SCIENCE, and SOCIOLOGY.)

DAVID KINLEY, Ph.D., LL.D., *Professor*

MAURICE HENRY ROBINSON, Ph.D., *Professor*

ERNEST RITSON DEWSNUP, A.M., *Professor*

ERNEST LUDLOW BOGART, Ph.D., *Professor*

NATHAN AUSTIN WESTON, Ph.D., *Assistant Professor*

JOHN CHRISTIE DUNCAN, Ph.D., *Assistant Professor*

SIMON LITMAN, D.Jur. Pub. et Rer. (Cam.), *Assistant Professor*

JOHN GIFFIN THOMPSON, Ph.D., *Instructor*

OSCAR ROSS MARTIN, A.B., *Assistant*

GEORGE WILLIAM DOWRIE, A.M., *Assistant*

CHARLES MANFRED THOMPSON, A.M., *Assistant*

ERNEST ALBERT RICH, *Student Assistant*

The department of economics includes general economics, economic history, finance, commerce, commercial law, industry, railway administration, and accountancy.

Courses 7, 22, 26, and 27, English Economic History, the Eco-

conomic History of the United States, Economic Resources, and Modern Industries, are open to freshmen without previous requirement. Courses numbered 101 and above are open to graduate students only.

Courses 4a, 4b, 5, 8, 10, 11, 12, 13, 17, 21, 29, 30, 41, 42, 43, and 45 are open to graduates and advanced undergraduates.

### *Honors*

For honors in economics, at least thirteen of the twenty-four hours required in the major subject shall be in courses requiring Economics 1 as a prerequisite.

One of the minors shall be selected from the following subjects: history, political science, sociology, and accountancy. The other minor shall be selected with the approval of the department.

#### 1. PRINCIPLES OF ECONOMICS.—I; (5).

Assistant Professor WESTON and others

*Prerequisite:* At least thirty hours of university work.

2. PRINCIPLES OF ECONOMICS.—(Section A open to junior and senior science and engineering students only; section C open to junior and senior agricultural students only.) I; II; (2).

I; Professor ROBINSON, Professor BOGART, Dr. THOMPSON, Mr. DOWRIE

II; Professor DEWSNUP, Dr. THOMPSON, Mr. DOWRIE

3. MONEY AND BANKING.—The history and theory of money, credit, and banking. II; (3). Assistant Professor WESTON

*Prerequisite:* Economics 1.

[4a. FINANCIAL HISTORY OF THE UNITED STATES TO THE CIVIL WAR.—Colonial and federal finance; currency, banking, tariff, and fiscal questions. II; (2). Not given in 1912-13.

Assistant Professor WESTON

*Prerequisite:* Economics 3; senior standing.]

4b. FINANCIAL HISTORY OF THE UNITED STATES SINCE 1860.—The finances of the Civil War and Reconstruction period; recent development of public and private finance; II; (2).

Assistant Professor WESTON

*Prerequisite:* Economics 3; senior standing.

5. PUBLIC FINANCE.—Public expenditures; financial administration; taxation; public debts. I; (3). Professor BOGART

*Prerequisite:* Economics 1, 3. Students who have had 6 hours in history and Political Science 1 and who present a statement from the department of political science showing that they are taking

political science as a major, may be admitted without Economics 3.

6. BUSINESS ORGANIZATION.—Business enterprises and their organization: Characteristics and relative advantages of individual proprietorship, partnership, and corporation; organization for operating purposes; effect of organization on business and technical efficiency; organization and work of commercial and industrial associations. *II*; (2).

Professor ROBINSON

*Prerequisite:* Economics 1, and 3 either preceding or concurrent. Open to students of Business Administration only.

7. ENGLISH ECONOMIC HISTORY.—The industrial development of England; the manorial system; the guilds; the commercial policy and expansion of the seventeenth and eighteenth centuries; the industrial and manufacturing growth of the nineteenth century. (Open to freshmen and sophomores only.) *I*; (3).

Professor BOGART

8. THE MONEY MARKET.—Dealings in money and credit; functions of money broker and banker; concentration of financial dealings at such centers as New York and London; international payments and the determination of rates of foreign exchange; seasonal demands for money; causes of fluctuation in rates of discount; monetary panics and crisis; investments; financial aspects of dealings on the stock and produce exchanges. *II*; (2).

Assistant Professor WESTON

*Prerequisite:* Economics 9. Open to students of Business Administration only.

9. PRACTICAL BANKING.—Practical banking in the United States. *I*; (2).

Assistant Professor WESTON

*Prerequisite:* Economics 3 and senior standing. Open to students of Business Administration only.

10. CORPORATION MANAGEMENT AND FINANCE.—The growth of corporations; their causes and forms; the promotion, financiering, incorporation, and capitalization of corporate consolidations; their organization and securities; position and relations of stockholders and directors; analysis of reports; stock speculation; relations of industrial corporations to international competition; receiverships and reorganizations; social and political effects. *I*; (3).

Professor ROBINSON

*Prerequisite:* Economics 1, 3.

11. INDUSTRIAL CONSOLIDATION.—The development of industrial consolidation; growth of monopoly; monopoly prices and

methods; ability of trusts to affect prices, wages, interest, and profits; the proposed plans for controlling trusts. *II*; (3).

Professor ROBINSON

*Prerequisite:* Economics 10.

12. LABOR PROBLEMS.—The history of trade unions; internal organization; restrictions as to membership; collective bargaining; limitation of output; objections to piece work; strikes; boycotts; injunctions. *I*; (3).

Assistant Professor LITMAN

*Prerequisite:* Economics 1, 3. Students who have had 6 hours in history and Sociology 1 and who present a statement from the department of sociology showing that they are taking sociology as a major may be admitted without Economics 3.

13. ECONOMIC DEVELOPMENT OF EUROPE SINCE THE INDUSTRIAL REVOLUTION.—The economic history of France, Germany, and England since the period of the industrial revolution. *II*; (3).

Professor BOGART

*Prerequisite:* At least sixty hours of university work, including Economics 1 and 3. Students who present a statement from the department of history, showing that they are taking history as a major, may be admitted without Economics 3.

16. ECONOMIC PROBLEMS.—Section A: Railway problems; taxation of corporations; the labor question. Section C: Special topics relating to agriculture. (A open to students in engineering; C to students in agriculture only.) *II*; Sec. A (2); Sec. C (3).

Professor ROBINSON, Professor BOGART, Dr. THOMPSON, Mr. DOWRIE

*Prerequisite:* Economics 1 or 2.

17. ECONOMIC HISTORY OF AGRICULTURE.—General characteristics of agriculture and its development as an industry in various countries at various times; land tenure and landed property; large, medium, and small farms or estates; economic conditions and results of extensive and intensive culture; agricultural credit and markets; agricultural labor; state of the agricultural class; organization in agriculture; relation of agriculture to other industries; relation of the state to agriculture; general aspects of farm organization and management. *II*; (2).

Dr. THOMPSON

*Prerequisite:* Economics 1, 3; senior standing. Seniors in the College of Agriculture who have had Economics 1 or 2 may be admitted to the course by special permission of the instructor.

18. SENIOR SEMINAR.—Investigation in economics, commerce,

and industry; preparation of theses. (For business students and others making economics a major.) *I, II; (4-8 for the year).*

Professor ROBINSON

21. **SOCIALISM AND SOCIAL REFORM.**—The historically important socialistic theories; the socialism of Karl Marx and the resulting social movements. *II; (3).*

Assistant Professor LITMAN

*Prerequisite:* Economics 1 and 12.

22. **THE ECONOMIC HISTORY OF THE UNITED STATES.**—The explorations and settlements that led to the colonization of this continent; the growth of industry, agriculture, commerce, transportation, and labor from the simple, isolated agricultural communities of the colonies to the complex industrial and commercial society of today. (Open to freshmen and sophomores only.) *II; (3).*

Professor BOGART

24. **STATISTICS.**—See Mathematics 23a, 31, and 129.

25. **COMMERCIAL LAW.**—Contracts; negotiable instruments; agency; partnership; business corporations; sales of personal property; bailments and carriers; guaranty and suretyship; insurance. *I, II; (3).*

Mr. RICH

*Prerequisite:* At least sixty hours of university credit including Economics 1 or 2 and Accountancy 1.

26. **ECONOMIC RESOURCES.**—Environmental influences affecting commercial and industrial development; important products and industries of different countries; extent and distribution of the resources and the industrial and commercial activities of the United States. (Open to freshmen and sophomores only.) *I; (3).*

Assistant Professor LITMAN

27. **MODERN INDUSTRIES.**—The raw materials of commerce; their geographical distribution and economic significance; the leading industries engaged in the utilization of these materials; sources of power; investment of capital; employment of men and of machinery; progressive stages of production; distribution of finished commodities. (Open to freshmen and sophomores only.) *II; (3).*

Assistant Professor LITMAN

*Prerequisite:* Economics 26, or an approved high school course in commercial geography.

28. **MECHANISM AND TECHNIQUE OF DOMESTIC COMMERCE.**—The principles and methods of buying and selling in internal trade; forms of wholesale and retail trade organizations; markets, fairs, auctions, stock and produce exchanges; department, mail-order, and

coöperative stores; commercial travelers; commercial competition; theory and practice of modern advertising; mercantile credit. *I*; (3). Assistant Professor LITMAN

*Prerequisite:* Economics 1, 3, 26 or 27.

[29. FOREIGN COMMERCE AND COMMERCIAL POLITICS.—Problems arising in connection with international trade relations, and various attempts to solve them; changes in theories and in policies; economic systems (mercantile, free-trade, protective); classes of customs tariffs; commercial treaties; promotion of shipping; institutions for furthering export trade (commercial museums, consular service). *I*; (3). Not given in 1912-13.

Assistant Professor LITMAN

*Prerequisite:* Economics 1, 3, 26 or 27.]

[30. TARIFF AND CUSTOMS REGULATIONS OF THE UNITED STATES.—Tariff legislation in the United States; the present tariff system; organization and work of the custom house; entry of goods. *II*; (3). Not given in 1912-13. Assistant Professor LITMAN

*Prerequisite:* Economics 29.]

31. ORGANIZATION OF FOREIGN COMMERCE.—Exporting and importing; means of communication and of transportation; the shipping business; duties of consuls. *II*; (3).

Assistant Professor LITMAN

*Prerequisite:* Economics 28.

33. ECONOMICS OF INSURANCE.—The historical development of insurance and its economic aspects. *I*; (2). Professor ROBINSON

*Prerequisite:* Economics 1, 3.

[34. PROPERTY INSURANCE.—Fire, marine, title, and credit insurance and corporate suretyship; technical characteristics and economic effects. *II*; (2). Not given in 1912-13.

Professor ROBINSON

*Prerequisite:* Economics 33.]

41. RAILWAY TRANSPORTATION.—General aspects in the United States; conditions abroad. Introduction; growth and present extent of the railway system; the relation of waterway and interurban competition to railway development; the railway corporation and its financial aspects; the management of a railway; railway combinations; the theory and practice of rate-making; relations with state and federal governments; the relation of European railways to the state. *I*; (3).

Professor DEWSNUP

*Prerequisite:* Economics 1, 3; for engineers, Economics 2.

42. RAILWAY RATES; THEIR CONSTRUCTION AND REGULATION.—Rate structure in the United States; the policy of the Interstate Commerce Commission as shown by its decisions; the relation of such policy to the various theories of rate making. *II*; (3).

Professor DEWSNUP

*Prerequisite:* Economics 41.

[43. THE THEORY AND PRACTICE OF RAILWAY TRAFFIC ADMINISTRATION.—The organization and methods of traffic management; problems connected therewith. (Registration in the second semester permitted only to those who obtain credit in the first semester.) *I, II*; (2). Not given in 1912-13.

Professor DEWSNUP

*Prerequisite:* Economics 1, 3. Open to students of Business Administration only.]

45. RAILWAY OPERATION AND ITS PROBLEMS.—Organization of the operating department; economic problems of maintenance of way, and of motive power and equipment; the purchase of materials and their distribution; train movement; yard and terminal services; labor and discipline. (Registration in the second semester permitted only to those who obtain credit in the first semester.) *I, II*; (2).

Professor DEWSNUP

*Prerequisite:* Economics 1, 3. Open to students of Business Administration only.

#### COURSES FOR GRADUATES

Every student entering upon graduate work in economics must have had a thorough course in the principles of the science and should also have studied some special part of the field of economics, such as public finance or money and banking.

The department of economics includes general economics, economic history, finance, commerce, and industry.

Complete sets of all the important French, German, English, and American economic and financial journals are on hand; ninety periodicals, foreign and domestic, in economics, finance, commerce, industry, statistics, etc., are currently received. The library is unusually strong in railroad literature, economic history, labor, finance, and general theory.

101. ECONOMIC THEORY.—*Twice a week; I, II.*

Professor KINLEY

[102. ADVANCED GENERAL ECONOMICS.—*Twice a week; I, II.* Not given in 1912-13.

Professor KINLEY]

103. RAILWAY ADMINISTRATION.—Topics relating to current

railway management are assigned for investigation, report, and discussion. The course is primarily intended for candidates for the degree of A.M. in Railway Administration. *Once a week; I, II.*

Professor DEWSNUP

104. FOREIGN AND COLONIAL COMMERCE OF THE UNITED STATES.—The foreign commerce of the United States as shown in government publications. *Twice a week; II.*

Assistant Professor LITMAN

[105. PUBLIC FINANCE.—The history and theory of public revenue and expenditure. *Twice a week; I, II.* Not given in 1912-13.

Professor BOGART]

106. RAILWAY POLICY.—A: Railway development in the United States. B: Railway development in foreign countries, particularly in western Europe. C: The state and the railway. Three years required for the completion of the course. The topic in 1912-13 is C. *Once a week; I, II.*

Professor DEWSNUP

107. THE CORPORATION IN ECONOMIC EVOLUTION.—*Once a week; I, II.*

Professor ROBINSON

[109. THEORY OF INDUSTRIAL CONSOLIDATIONS.—Nature of industrial consolidations; conditions and causes responsible for their development; their effects upon the production and distribution of wealth. *Once a week; I, II.* Not given in 1912-13.

Professor ROBINSON]

118. SEMINAR.—*I, II.*

Professor KINLEY and others

[120. HISTORY OF ECONOMIC THOUGHT.—*Twice a week; I.* Not given in 1912-13.

Dr. THOMPSON]

122. ADVANCED ECONOMIC HISTORY OF THE UNITED STATES.—*Twice a week; I, II.*

Professor BOGART

## ACCOUNTANCY

(See also ECONOMICS.)

NOTE:—The only courses in accountancy open to students not registered in Business Administration are 1, 10, and 11.

Courses 4, 5, 6, and 7 are open to graduates and advanced undergraduates.

1. PRINCIPLES OF ACCOUNTANCY.—Keeping accounts of various kinds of business, mercantile, industrial, and financial; accounting for various types of business organization; industrial and commercial statistics of a plant, and proper deductions as to efficiency of departments and soundness of business policy; designing of ac-



counting systems for different kinds of businesses. (If elected this course must be taken throughout the year in order to secure credit.) *I, II; (3).* Assistant Professor DUNCAN, Mr. MARTIN

*Prerequisite:* Thirty hours of university credit; registration in Economics I.

3. INDUSTRIAL ACCOUNTING.—Types of industries; methods of installing accounting systems to suit their technical peculiarities, for the purpose of revealing costs and efficiency in management both for the plant as a whole and by departments. *I; (2).*

Assistant Professor DUNCAN

*Prerequisite:* Accountancy I.

4. ADVANCED ACCOUNTING.—The handling of capital, revenue, dissolution of partnership, realization, liquidation, insolvency, goodwill, treatment of bad debts, suspense, maintenance, depreciation, reserve, and sinking funds, contingent funds, secret reserves, and the like. *II; (3).*

Assistant Professor DUNCAN

*Prerequisite:* Accountancy I.

5. AUDITING.—The duties and responsibilities of an auditor; kinds of audits; value of each; the auditor's report, what it should contain; his certificate, its value; the preparation of audit reports. (For students of accountancy only.) *II; (2).*

Assistant Professor DUNCAN

*Prerequisite:* Accountancy 4, 7.

[6. RAILROAD ACCOUNTING.—The handling of railroad revenue accounts, including freight, passenger, express, and other earnings from the road and allied companies; the treatment of operating expenses, fixed charges, the work of the Interstate Commerce Commission in standardizing railway accounting methods. *II; (2).* Not given in 1912-13.

Assistant Professor DUNCAN

*Prerequisite:* Accountancy 4, 7. For students of accountancy and railway traffic and accounting only.]

7. ADVANCED ACCOUNTING PROBLEMS.—Continuation of Accountancy 4. Practical problems. Special topics: executor accounts, insurance accounts, and accounting for municipalities and other public bodies. *I; (3).*

Assistant Professor DUNCAN

*Prerequisite:* Accountancy 4.

10. SHOP MANAGEMENT AND COST KEEPING.—Types of industries, how they influence plant layouts, the laborers needed, and the materials used; types of records suitable for each kind of industry in order to approximate costs of manufacture and to deter-

mine and compare the efficiencies of departments, of individual workers, of methods of production, and the like. The work is presented from the standpoint of the engineer and shop manager. *II*; (2).

Assistant Professor DUNCAN

*Prerequisite:* Open only to engineering students who have had Economics I or 2.

11. FARM ACCOUNTING.—Single and double entry; designing of accounting systems for different kinds of farm operations and for different kinds of farming. *I*; (2).

Mr. MARTIN

*Prerequisite:* Open to junior and senior students of agriculture only.

## EDUCATION

WILLIAM CHANDLER BAGLEY, Ph.D., *Professor*

LOTUS DELTA COFFMAN, Ph.D., *Professor*

LEWIS FLINT ANDERSON, Ph.D., *Assistant Professor*

WILFORD STANTON MILLER, A.M., *Assistant and Secretary*

The courses of the department fall into two general divisions: courses primarily for professional training and courses more specifically designed for general culture. The first division includes courses 1, 3, 4, 6, 9, 10, 11, 19, and 20; the second division, courses 2, 12, 13, 17, and 18. Students majoring in education will be required to take at least three hours in psychology in addition to the requirements in education. Courses 1 and 5 in psychology are especially recommended.

### *Honors*

Candidates for honors in education must offer:

1. A minimum of 18 hours in education and 6 hours in psychology. Teachers' courses, not to exceed 3 hours in all, offered by other departments of the University, may, with the approval of the department of education, be counted as part of this requirement.

2. Minors in either (1) psychology (at least 9 hours exclusive of the 6 hours counted toward the major) and one subject selected from those that are usually taught in secondary schools, or (2) any two related subjects commonly taught in secondary schools. No course may be counted toward the minimum requirement for minors which may not be counted toward the major requirement in such subjects.

## INTRODUCTORY COURSES

1. PRINCIPLES OF EDUCATION.—The processes of education traced back to the basic principles of biology, psychology, and sociology which explain and justify them. (Preceded by a brief sketch of the public school system.) *I*; (3). Professor BAGLEY

*Prerequisite:* Two years of university work.

2. HISTORY OF EDUCATION.—The development of educational theory and practice in their relation to the history of civilization. *II*; (5). Assistant Professor ANDERSON

*Prerequisite:* Two years of university work.

## INTERMEDIATE COURSES

[3. GENERAL METHOD.—*II*; (3). Not given in 1912-13.]

10. OBSERVATION AND THE TECHNIQUE OF TEACHING.—Systematic observation of classroom work in neighboring high schools; weekly conferences for the discussion of observations; two lectures each week upon the technique of teaching; preparation by students of plans illustrating types of school exercises. *I, II*; (3).

Professor BAGLEY

*Prerequisite:* Education I.

[11. PRACTICE TEACHING.—*I or II*; (5). Not given in 1912-13.]

15. SCHOOL HYGIENE.—The hygienic aspects of school architecture and equipment; the hygiene of posture, exercise, and fatigue, and of reading and writing; the bearing of hygienic principles upon the course of study, the daily program, and other details of administration and teaching. *II*; (3). Professor BAGLEY

*Prerequisite:* Education I.

16. SOCIAL EDUCATION.—The school as a social factor in its relation to the home, the church, and the state; relation of education to child labor, vocation, and crime; educational extension. *II*; (3).

Professor COFFMAN

*Prerequisite:* Two years of university work.

23. AGRICULTURAL EDUCATION.—*II*; (3).

Assistant Professor NOLAN

## ADVANCED COURSES FOR UNDERGRADUATES AND GRADUATES

4. PROBLEMS OF EDUCATIONAL ADMINISTRATION.—The interpretation of present tendencies as exemplified in the school systems of typical cities and states, and in recent educational experiments in administration, discipline, methods, and subject-matter. *I*; (3).

Professor COFFMAN

*Prerequisite:* Education I, 2.

5. COMPARATIVE EDUCATION.—Elementary and secondary education in the United States, England, Germany, and France. *I*; (3)

Assistant Professor ANDERSON

*Prerequisite:* Education 1, 2.

6. PRINCIPLES OF SECONDARY EDUCATION.—High School organization and management; educational value of subjects represented in the secondary curriculum; the structure of the course of study; the technique of secondary teaching and management. *II*; (3).

Professor COFFMAN, Assistant Professor HOLLISTER

*Prerequisite:* Education 1.

12. HISTORY OF AMERICAN EDUCATION.—(Subject to the approval of the Graduate School faculty.) *I*; (2).

Assistant Professor ANDERSON

*Prerequisite:* Education 2.

13a. EDUCATIONAL CLASSICS.—The sources of the history of education; the educational writings of Plato, Aristotle, Quintilian, Montaigne, Milton, Locke, Rousseau. *I*; (3).

Assistant Professor ANDERSON

*Prerequisite:* Education 2.

13b. EDUCATIONAL CLASSICS.—(Continuation of 13a.) The educational theories of Pestalozzi, Herbart, Froebel, Herbert Spencer, and others. *II*; (3).

Assistant Professor ANDERSON

*Prerequisite:* Education 2.

[18. PRINCIPLES OF ESTHETIC, MORAL, AND RELIGIOUS EDUCATION—*I*; (3). Not given in 1912-13.]

20a. THEORY OF SUPERVISION.—The problems of supervision; the supervisor's functions in training and improving teachers. (Open only to graduate students and to seniors who are either graduates of normal schools or experienced teachers, or who are preparing for the work of supervision in special subjects, such as household science, manual training, and physical training.) *II*; (3).

Professor COFFMAN

*Prerequisite:* Education 1.

[20b. THEORY AND PRACTICE OF SCHOOL SUPERVISION.—*II*; (5). Not given in 1912-13.]

25. EDUCATIONAL PSYCHOLOGY.—(See Psychology *II*.) *II*; (3).

Professor BAGLEY

#### COURSES FOR GRADUATES

Graduate students who are taking their major work in education must have had as a prerequisite for such study Education 1, 2, and

10 and at least one elementary course in psychology. Work in the biological sciences, in philosophy, and in psychology is also recommended.

101. SEMINAR.—*I, II.*

Professor BAGLEY, Professor COFFMAN, Assistant Professor ANDERSON

108. HISTORY OF INDUSTRIAL AND VOCATIONAL EDUCATION.—Industry and industrial training in Egypt, Greece, Rome; industry and industrial training in the Middle Ages; the industrial revolution and its effect upon education; recent tendencies in the development of agricultural and industrial high schools, agricultural colleges, mono-technic schools, continuation schools. *Twice a week; II.*

Assistant Professor ANDERSON

[111. PRACTICE TEACHING.—*I, II.* Not given in 1912-13.]

112. PRINCIPLES OF EDUCATION.—The organization of public education in the United States and other countries, the aims of education; a brief resumé of the principles of teaching. (Designed for the general student and not open for credit to students who have elected education as a major subject.) *Twice a week; I.*

Professor BAGLEY

119. THE ELEMENTARY CURRICULUM.—The functions and values of elementary school subjects; practical exercises in the construction of school curricula. (Designed especially for superintendents and principals.) *Three times a week; I.*

Professor COFFMAN

## ELECTRICAL ENGINEERING

ERNST JULIUS BERG, M.E., D.Sc., *Professor*

MORGAN BROOKS, Ph.B., M. E., *Professor*

ELLERY BURTON PAINE, M.S., E.E., *Assistant Professor*

EDWARD HARDENBERGH WALDO, A.B., M.E., *Assistant Professor*

JOHN MYRON BRYANT, M.S., E.E., *Assistant Professor*

FRANK GARDNER WILLSON, B.S., *Instructor*

LEONARD VAUGHAN JAMES, M.S., *Instructor*

HARRY GRAY HAKE, M.S., *Instructor*

IRA WILLIAM FISK, B.S., *Instructor*

FRANK CARLTON LORING, A.M., *Instructor*

### 1. ELECTRICAL ENGINEERING.—Principles of electrical machinery;

selection, installation, and operation; distribution of power; motor applications. (For municipal and sanitary engineers.) *II*; (2).

Professor BROOKS

*Prerequisite:* Physics 1, 3; junior standing.

3. DYNAMO ELECTRICAL MACHINERY.—Laws of electric and magnetic circuits; principles of construction and operation of direct current generators and motors. *I*; (3).

Assistant Professor PAINE, Assistant Professor BRYANT, Mr. JAMES, Mr. HAKE

*Prerequisite:* Physics 1, 3; Mathematics 9.

5. ALTERNATING CURRENTS.—A mathematical and graphical treatment of the principles of periodic currents; theory of the simple phenomena in transmission lines and transformers. *II*; (4).

Assistant Professor PAINE, Assistant Professor BRYANT, Mr. JAMES, Mr. HAKE

*Prerequisites* Electrical Engineering 3.

6. ALTERNATING CURRENTS.—(For mechanical engineers.) *I*; (2).

Professor BROOKS

*Prerequisite:* Electrical Engineering 3 or 16.

9. LIGHTING.—Electric lamps and other illuminants, and their effective use; interior wiring; methods of electrical distribution. (For architects.) *II*; (1).

Professor BROOKS

*Prerequisite:* Junior standing.

13. SEMINAR.—Electrical railroading; illumination; telegraphy; telephony; storage batteries; electric metallurgy. *I, II*; (1).

Professor BERG, Assistant Professor PAINE

*Prerequisite:* Junior standing.

14. ALTERNATING CURRENTS.—Alternating-current transformers and generators. *I*; (4).

Assistant Professor PAINE, Assistant Professor BRYANT, Mr. JAMES, Mr. HAKE

*Prerequisite:* Electrical Engineering 5.

16. DYNAMO-ELECTRIC MACHINERY.—Direct-current generators; motors; distribution circuits; storage batteries. Laboratory practice. (For mechanical engineers.) *II*; (4).

Professor BROOKS, Assistant Professor WALDO, Mr. JAMES, Mr. HAKE, Mr. LORING

*Prerequisite:* Physics 1, 3; Mathematics 9.

17. **ADVANCED ALTERNATING CURRENTS.**—Synchronous, induction, and commutator alternating current motors; rotary converters; distributed inductance and capacity; transient phenomena. *II*; (4).

Professor BERG, Assistant Professor PAINE, Assistant Professor BRYANT, Mr. JAMES, Mr. HAKE

*Prerequisite:* Electrical Engineering 14, 24.

20. **ELECTRICAL ENGINEERING LABORATORY.**—The construction of special apparatus or other work approved by the department. (Electric for juniors and seniors.) *I, II*; (1 to 3.)

Assistant Professor BRYANT, Mr. WILLSON

22. **ELECTRICAL ENGINEERING LABORATORY.**—Direct current laboratory accompanying Electrical Engineering 3. *I*; (2).

Mr. WILLSON, Mr. HAKE, Mr. JAMES, Mr. LORING

*Prerequisite:* Registration in Electrical Engineering 3.

23. **ELECTRICAL ENGINEERING LABORATORY.**—Determination of the flux and E. M. F. waves of alternators. Alternating current circuits, instruments. *II*; (2).

Mr. JAMES, Mr. FISK, Mr. HAKE, Mr. LORING

*Prerequisite:* Electrical Engineering 3, 22; registration in Electrical Engineering 5.

24. **ELECTRICAL ENGINEERING LABORATORY.**—Advanced direct and alternating current testing. *I*; (2).

Assistant Professor WALDO, Mr. WILLSON, Mr. FISK

*Prerequisite:* Electrical Engineering 23; registration in Electrical Engineering 14.

27. **ELECTRICAL ENGINEERING LABORATORY.**—Advanced alternating current testing. *II*; (2).

Assistant Professor BRYANT, Mr. WILLSON, Mr. FISK

*Prerequisite:* Electrical Engineering 24; registration in Electrical Engineering 17.

28. **ELECTRICAL ENGINEERING LABORATORY.**—Testing of dynamos and motors. *I*; (1).

Mr. LORING

*Prerequisite:* Electrical Engineering 1.

29. **ELECTRICAL ENGINEERING LABORATORY.**—Alternating current operation and testing. (For students in mechanical engineering.) *II*; (2).

Mr. WILLSON

*Prerequisite:* Electrical Engineering 6.

32. ELECTRICAL DESIGN.—Calculation and design of electromagnets and of dynamos, direct and alternating, and of transformers. *I; (2).* Assistant Professor WALDO, Mr. FISK

*Prerequisite:* Electrical Engineering 5; registration in Electrical Engineering 14.

34. ELECTRICAL DESIGN.—Calculation of induction motors and converters. Problems in power plant design. *II; (3).*

Assistant Professor WALDO, Mr. FISK

*Prerequisite:* Electrical Engineering 14.

35. THESIS.—First semester, preliminary reading and investigation; second semester, completion. Subjects must be chosen and approved before the first Monday in November. *II; (3).*

#### COURSES FOR GRADUATES

Entrance upon graduate work in electrical engineering presupposes the full undergraduate course in that subject.

101. ADVANCED COURSE IN ALTERNATING CURRENTS.—The theory of Transient Phenomena; polyphase circuits; alternating current measuring apparatus. *Twice a week; I, II.*

Professors BERG and BROOKS

102. THE GENERATION, TRANSMISSION, AND UTILIZATION OF ELECTRICAL ENERGY.—Dynamo-electric machinery; light and power plants; switchboards and transmission lines. *Twice a week; I, II.*

Professor BERG, Assistant Professor PAINE

103. ELECTRICAL DESIGN.—The development of plans for an electrical machine or apparatus of specified character; or for the arrangement of an electrical plant; or for the installation of such machinery or apparatus. *Twice a week; II.*

Professor BERG, Assistant Professor WALDO

104. TELEGRAPHY AND TELEPHONY.—Professor BROOKS, Assistant Professor PAINE

105. ELECTRICAL ENGINEERING RESEARCH.—An experimental investigation of some electrical phenomena, or tests of some electrical machine, or of a plant of such machines. *Twice a week; I, II.*

Professor BERG, Assistant Professor BRYANT

106. ILLUMINATION.—

Professor BROOKS, Assistant Professor BRYANT

107. HIGH TENSION INVESTIGATIONS COVERING WORK ON DIELECTRICS, CORONA, ETC.—

Professor BERG, Assistant Professor BRYANT

108. CENTRAL STATION ECONOMICS.—

Professor BERG



ENGINEERING

(See ARCHITECTURE, CIVIL ENGINEERING, DRAWING, ELECTRICAL ENGINEERING, MECHANICAL ENGINEERING, MECHANICS, MINING ENGINEERING, MUNICIPAL AND SANITARY ENGINEERING, PHYSICS, RAILWAY CIVIL ENGINEERING, RAILWAY ELECTRICAL ENGINEERING, and RAILWAY MECHANICAL ENGINEERING.)

THE ENGLISH LANGUAGE AND LITERATURE

(Including RHETORIC)

RAYMOND MACDONALD ALDEN, Ph.D., *Professor and Chairman*  
DANIEL KILHAM DODGE, Ph.D., *Professor*  
THOMAS ARKLE CLARK, B.L., *Professor*  
STUART PRATT SHERMAN, Ph.D., *Professor*  
EDWARD FULTON, Ph.D., *Associate Professor*  
EDWARD CHAUNCEY BALDWIN, Ph.D., *Assistant Professor*  
HARRY GILBERT PAUL, Ph.D., *Assistant Professor*  
FRANKLIN WILLIAM SCOTT, A.M., *Assistant Professor, Secretary*  
HARRIE STUART VEDDER JONES, Ph.D., *Assistant Professor*  
THACHER HOWLAND GUILD, A.M., *Associate*  
JACOB ZEITLIN, Ph.D., *Associate*  
MARTHA JACKSON KYLE, A.M., *Instructor*  
HERBERT LE SOURD CREEK, Ph.D., *Instructor*  
CLARENCE VALENTINE BOYER, Ph.D., *Instructor*  
ARTHUR JERROLD TIEJE, Ph.D., *Instructor*  
JOHN CLARK JORDAN, A.M., *Instructor*  
VICTOR ALVIN KETCHAM, A.B., LL.B., *Instructor*  
LAWRENCE GILPIN PAINTER, Ph.B., LL.B., *Instructor*  
SADA ANNIS HARBARGER, A.M., *Assistant*  
VIDA LUCILE COLLINS, A.M., *Assistant*  
MARION CHARLOTTE LANDEE, *Assistant*  
RUTH KELSO, A.M., *Assistant*  
ALTA GWINN, A.M., *Assistant*  
WALTER A. BUCHEN, A.B., *Assistant*  
FRANK ERNEST HILL, A.B., *Assistant*  
MELVIN ARTHUR HOLLINSHEAD, A.B., *Assistant*  
JOSEPH ALLAN NEVINS, A.B., *Assistant*  
LEW R SARETT, A.B., *Assistant*  
EMERSON GRANT SUTCLIFFE, A.B., *Assistant*  
PAUL JAY BATKIN, A.B., *Assistant*  
THOMAS GREGORY GOODWIN, A.B., *Assistant*

*Major*

A student making English a major must take 24 hours in English in addition to Rhetoric 1 and the first semester of English 1 or 10. Of these 24 hours, at least 12 must be in English literature, and at least 3 in composition. Of the total 24 hours, at least 6 must be taken in advanced courses.

*Honors*

Candidates for honors in English must offer:

1. Work in English amounting to 24 hours in addition to Rhetoric 1 and the first semester of English 1 or 10.
2. At least 6 hours in advanced courses, which may be in either English literature or English composition.
3. A minimum of 15 hours in English literature in addition to the first semester of English 10, and a minimum of 6 hours in English composition in addition to Rhetoric 1.
4. Work aggregating 24 hours in two minor subjects, which must be in two foreign languages or in one foreign language and either history or philosophy. French 1 and German 1 and 3 may not be counted toward the fulfillment of the minor requirements.

*A. LITERATURE AND LANGUAGE*

## ELEMENTARY COURSES

1. SURVEY OF ENGLISH LITERATURE.—(Credit is not given for either semester separately, nor for the course in addition to course 10 or course 20. Only one semester's work is credited toward a major in English. Seniors in the College of Literature and Arts may receive but half credit.) *I, II; (4).*

Professor SHERMAN, Assistant Professor BALDWIN, Dr. BOYER, Dr. CREEK, Miss KYLE, Mr. JORDAN, Mr. PAINTER, Dr. TIEJE  
*Prerequisite:* A year's college work.

2. INTRODUCTORY COURSE IN LITERATURE OF THE NINETEENTH CENTURY.—(This course is offered only for those who have received credit for English 1 as a one-semester course.) *I; (4).*

Dr. TIEJE

10. INTRODUCTION TO LITERATURE.—A (*First semester*), The Forms of Prose Literature; B (*Second Semester*), The Forms of Poetry. (This course is intended only for those who expect to include a considerable amount of literature, in English or some other

language, in their curriculum. Credit is not given for the course in addition to course 1 or course 20. Only one semester's work is credited toward a major in English. Seniors in the College of Literature and Arts may receive but half credit. Credit is not given for the first semester separately.) *I, II; (3).*

Professor ALDEN, Assistant Professor PAUL, Miss KYLE

*Prerequisite:* The minimum entrance requirements in English.

16. AMERICAN LITERATURE.—(Credit is not given for either semester separately.) *I, II; (2).* Assistant Professor PAUL

*Prerequisite:* English 1 or 10.

17. THE ENGLISH LANGUAGE.—Some account of its history, with special reference to the characteristics and usage of modern English. *I; (3).* Associate Professor FULTON

*Prerequisite:* Rhetoric 1.

20. THE CHIEF ENGLISH WRITERS.—(This course is offered only for those whose program admits of but one semester's work in English, and who therefore may not register for course 1. It is not accepted, like course 1, as a prerequisite for more advanced courses. Credit is not given for the course in addition to course 1 or course 10. Seniors in the College of Literature and Arts may receive but half credit.) *I or II; (4).*

Professor ALDEN, Professor DODGE, Dr. BOYER, Dr. TIEJE, Mr. BUCHEN

*Prerequisite:* A year's college work.

23. INTRODUCTION TO SHAKESPEARE.—*I or II; (3).*

Professor SHERMAN, Mr. GUILD

*Prerequisite:* English 1 or 10.

#### INTERMEDIATE COURSES

*Prerequisite:* Eleven hours of English literature, or eight hours of English literature and eight hours of a foreign language.

7. CHAUCER.—*I; (3).* Assistant Professor JONES

19. LITERARY STUDY OF THE BIBLE.—Hebrew literature as an expression of the life of the race that produced it; the debt, both ethical and artistic, of modern life to ancient Hebrew thought. (Either semester may be taken separately.) *I, II; (3).*

Assistant Professor BALDWIN

24. ENGLISH LITERATURE OF THE VICTORIAN PERIOD.—*II; (4).*

Miss KYLE

29. ENGLISH LITERATURE FROM 1557 TO 1688, EXCLUSIVE OF THE DRAMA.—*I*; (3). Assistant Professor BALDWIN

31. ENGLISH LITERATURE FROM 1688 TO 1789.—*II*; (3).

Assistant Professor PAUL

32. THE GREATER ENGLISH CRITICS OF THE 19TH CENTURY.—*II*; (3). Associate Professor FULTON

33. ENGLISH LITERATURE FROM 1789 TO 1837.—*I*; (4).

Dr. ZEITLIN

#### ADVANCED COURSES FOR UNDERGRADUATES AND GRADUATES

*Prerequisite:* Sixteen hours of English literature. Juniors and seniors, however, who have had at least eleven hours of English literature, and have taken advanced work in either a foreign language or in history or have had a year's work in philosophy, may elect any of these courses.

3. THE POETRY OF MILTON.—Origins, forms, artistic and ethical values; Milton's place in English literary history. *II*; (3).

Assistant Professor BALDWIN

4. ENGLISH VERSIFICATION.—Theory of English rhythm and metre; history of the development of the forms of English verse. *I*; (3).

Professor ALDEN

5. SHAKESPEARE AND HIS PREDECESSORS.—(The second semester, devoted to Shakespeare, may be taken without the first.) *I, II*; (3).

Professor DODGE

8. OLD ENGLISH (ANGLO-SAXON).—Grammar; prose; short poems; *Beowulf*. *I, II*; (3).

Professor DODGE

[14. STUDIES IN THE HISTORY OF JOURNALISM.—Not given in 1912-13.

Assistant Professor SCOTT]

15. TEACHERS' COURSE.—Methods of teaching English literature and composition in the high school. (This course, while open to graduate students, is not credited toward advanced degrees. Either semester may be taken separately.) *I, II*; (2).

Assistant Professor PAUL

18. MODERN ENGLISH GRAMMAR.—The structure of the sentence and its analysis into the parts of speech; the common grammatical categories; the peculiarities of English syntax. *II*; (3).

Dr. ZEITLIN

27. LITERATURE OF THE FOURTEENTH CENTURY.—That literature of the period which best reflects the political and religious life of the time; Chaucer; the so-called revival of alliterative poetry. *II*; (3).

Assistant Professor JONES

35a. ENGLISH DRAMA FROM 1600 TO 1700.—Chapman, Jonson, Dekker, Marston, Heywood, Middleton, Beaumont and Fletcher, Webster, Ford, Massinger, Shirley, Dryden, Wycherly, Otway, Lee, Congreve, Vanbrugh. *I*; (3). Professor SHERMAN

[35b. ENGLISH DRAMA FROM 1700 TO 1900.—Omitted in 1912-13.]

39. INTRODUCTION TO THE LITERATURE OF THE MIDDLE AGES.—European culture from the fourth century; the relation of English and continental literature to the fourteenth century. *I*; (3).

Dr. CREEK

#### COURSES FOR GRADUATES

Students who enter upon graduate work with English as their major subject are expected to give evidence of ability to write well, and of a considerable acquaintance with English literature. Their progress in the field of English will depend, however, in great measure upon the breadth and thoroughness of their training as undergraduates in the following closely allied subjects: the Classics, the modern languages, history, and philosophy.

A reading knowledge of French and German is from the beginning highly desirable; after the first year it is indispensable.

*The Degree of Master of Arts in English.* In addition to complying with the general rules of the Graduate School, candidates for the degree of Master of Arts in English must comply with the following rules of the Department of English: (1) they must choose a portion of their work from the group of courses described as "for graduates"; (2) must offer an elementary course in Anglo-Saxon; and (3) must take, besides the regular semester examinations in all their courses, a general examination, oral or written as the department may prescribe, which shall be a final test of the candidate's fitness and ability.

*The Degree of Doctor of Philosophy in English.* Candidates for the degree of Doctor of Philosophy in English may expect to be examined on the entire field of the English language and literature. They are urged, furthermore, to acquaint themselves as fully as possible with the history of the philosophy of the period in which their main interest lies, and with the foreign language and literature most closely related to English in that period.

101. RESEARCH IN SPECIAL PERIODS.—Competent graduate students are encouraged to seek the advice and assistance of the department of English and to submit to the department plans for

study in the language or literature of the periods mentioned below.

A. Anglo-Saxon language and literature.

Professor DODGE, Dr. ZEITLIN

B. Thirteenth and Fourteenth Centuries.

Assistant Professor JONES

C. Sixteenth Century.

Professor ALDEN, Professor DODGE

D. Seventeenth Century.

Professor ALDEN, Assistant Professor BALDWIN

E. Eighteenth Century.

Professor SHERMAN, Assistant Professor PAUL

F. Nineteenth Century.

Professor SHERMAN, Associate Professor FULTON

102. SEMINAR IN COMPARATIVE LITERATURE.—Subject: Tragedy in the Nineteenth Century. *Twice a week; I.* Professor ALDEN

105. SHAKESPEARE'S SONNETS.—The text and the problems involved in its interpretation. *Twice a week; II.* Professor ALDEN

106. ENGLISH LITERARY CRITICISM FROM THE AGE OF SIDNEY TO THE AGE OF COLERIDGE.—*Twice a week; I, II.*

Associate Professor FULTON

109. GERMAN AND SCANDINAVIAN INFLUENCES ON ENGLISH LITERATURE OF THE EIGHTEENTH AND NINETEENTH CENTURIES.—*Twice a week; I.* Professor DODGE

110. OLD ENGLISH (ANGLO-SAXON) POETRY.—*Twice a week; I, II.* Professor DODGE

113. HISTORICAL PROSE SYNTAX.—The forces, native and foreign, at work in the development of English prose style as far as it relates to sentence structure. During 1912-13 the emphasis is placed on Tudor prose. *Twice a week; I, II.* Dr. ZEITLIN

126. ENGLISH BALLADS AND METRICAL ROMANCES.—*Twice a week; I, II.* Assistant Professor JONES

[127. MIDDLE ENGLISH.—Critical reading of Middle English texts. *Twice a week; I, II.* Not given in 1912-13.

Assistant Professor JONES]

136. THE TRANSITION FROM THE SEVENTEENTH TO THE EIGHTEENTH CENTURY; THE RISE OF CLASSICISM.—*Twice a week; I, II.* Assistant Professor PAUL

137. NINETEENTH CENTURY PROSE WRITERS.—*Twice a week; I, II.* Professor SHERMAN

[138. THE ROMANTIC MOVEMENT IN ENGLAND.—*Twice a week; I, II.* Not given in 1912-13. Professor SHERMAN]

B. RHETORIC

I. COMPOSITION

ELEMENTARY COURSES

1. \*RHETORIC AND THEMES.—Required for students in the Colleges of Literature and Arts, Science, Engineering, and Agriculture. *I, II; (3).*

Assistant Professor SCOTT (in charge), Associate Professor FULTON, Assistant Professor JONES, Mr. GUILD, Dr. ZEITLIN, Dr. BOYER, Dr. CREEK, Mr. JORDAN, Mr. PAINTER, Dr. TIEJE, Mr. WARNOCK, Mr. BUCHEN, Miss HARBARGER, Miss KELSO, Miss COLLINS, Miss GWINN, Mr. NEVINS, Mr. SUTCLIFFE, Mr. GOODWIN, Mr. HILL, Mr. SARETT, Mr. BATKIN, Mr. HOLLINS-HEAD

*Prerequisite:* The minimum entrance requirements in English.

For the benefit of those whose course is irregular, a limited number of sections in each semester take up the work of the other semester. The course is not counted toward a major in English.

INTERMEDIATE COURSES

2. ARGUMENTATION.—General argumentative writing; the purpose of argument; the tests of evidence and reasoning. Text-book; class discussions; assigned work. *I; (3).* Mr. KETCHAM

*Prerequisite:* Rhetoric 1.

3. ENGLISH COMPOSITION.—Short themes, with an occasional long theme. *I or II; (3).* Professor CLARK, Mr. GUILD, Miss KYLE

*Prerequisite:* Rhetoric 1.

6. ADVANCED COMPOSITION: NARRATION.—Practice in short story writing. (Intended for those who have some aptitude for literary work.) *I; (3).* Mr. GUILD

*Prerequisite:* Two years of college work and the consent of the instructor.

10. BUSINESS WRITING.—Business correspondence, with practice in incidental writing, summaries, etc. (Open only to those taking a business course, except by special permission. Not counted toward a major in English.) *I or II; (2).* Professor CLARK

*Prerequisite:* Rhetoric 1.

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\*Those students who show by examination a proficiency in composition sufficient to qualify them for the second semester's work in Rhetoric 1 may be excused from the first semester's work. See page 81.

12. NEWSPAPER WRITING.—News writing; interviewing and reporting; news correspondence; news form; news value; typography; proof reading. *I, II; (2).* Assistant Professor SCOTT

*Prerequisite:* Rhetoric I.

19. AGRICULTURAL NEWS WRITING.—Class exercises; lectures; assignments in gathering and preparing material for agricultural papers. *II; (3).* Assistant Professor SCOTT

*Prerequisite:* Junior or senior standing in the College of Agriculture. Rhetoric I.

#### ADVANCED COURSES FOR UNDERGRADUATES AND GRADUATES

15. ADVANCED NEWSPAPER WRITING.—The larger problems in reporting; application of principles of history, economics, and political science to current public events; editing; editorial writing. *I, II; (3).* Assistant Professor SCOTT

*Prerequisite:* Rhetoric 12 or the consent of the instructor.

17. ADVANCED COMPOSITION.—Practice writing, with special emphasis on the study of structure; criticism of current periodical literature; the developing of material for reports, magazine articles, etc. *II; (3).* Mr. GUILD

*Prerequisite:* Two years of college work and the consent of the instructor.

## II. PUBLIC SPEAKING

### ELEMENTARY COURSE

7. PUBLIC SPEAKING.—Reading aloud, with occasional memory work. Lectures; class exercises; individual instruction. *I, II; (2).* Mr. KETCHAM, Mr. SARETT, Miss LANDEE

*Prerequisite:* Rhetoric I.

### INTERMEDIATE COURSES

4. THE ART OF DEBATE.—Brief writing and the extemporaneous presentation of argument in formal debate. (Contestants in the intercollegiate debates, when registered for this course, are excused from the class work during their period of practice.) *II; (3).*

Mr. KETCHAM

*Prerequisite:* Rhetoric 2, 7.

5. THE FORMS OF PUBLIC ADDRESS.—Extempore speaking; formal public speaking; discussions of current events; parliamentary procedure. *I, II; (2).* Mr. KETCHAM



8. INTERPRETATIVE READING.—II; (3). Mr. GUILD  
*Prerequisite:* Rhetoric I, 7.  
 [9. DRAMATIC READING.—Not given in 1912-13. Mr. GUILD]

## ENTOMOLOGY

(See also BOTANY, PHYSIOLOGY, and ZOOLOGY.)

STEPHEN ALFRED FORBES, Ph.D., LL.D., *Professor*  
 JUSTUS WATSON FOLSOM, D.Sc., *Assistant Professor*  
 ALEXANDER DYER MACGILLIVRAY, Ph.D., *Assistant Professor*  
 HUGH GLASGOW, A.B., *Assistant*  
 ALVAH PETERSON, B.S., *Assistant*

Entomology as taught at the University is distinctly differentiated from the work in zoology. Students preparing for service as economic entomologists should take as many of the courses offered as possible, including especially 2, 3, 4, 7, 8, 14, and 108. Those preparing for the teaching of zoology should take either 2 and 4, or 3 and 4, or all three of these courses.

1. ELEMENTARY ENTOMOLOGY.—Lectures; laboratory; field work. (Open to all students.) I, II; (2). Assistant Professor FOLSOM
2. GENERAL ENTOMOLOGY.—Field entomology; morphological and physiological entomology; the collection and preservation of specimens; laboratory studies of typical insects; the recognition of adaptive structures and their utilities. (This course and course 3 form a year's work, covering the whole field. Either may be taken independently of the other.) I; (5).

Assistant Professors FOLSOM and MACGILLIVRAY

*Prerequisite:* Entomology 1, or 4, or equivalent.

3. GENERAL ENTOMOLOGY.—The classification and determination of insects; the study of life histories in the insectary and by field observation; the collection of information with respect to the ecological relations of insects. II; (5). Assistant Professor FOLSOM

*Prerequisite:* Entomology 1 or 4, or equivalent.

4. INTRODUCTION TO ECONOMIC ENTOMOLOGY.—Lectures; field work; laboratory. *Section A* for students of agriculture. I; *first half*; (2½). *Section B*, for students of horticulture. II; *second half*; (2½). Assistant Professor FOLSOM

5. INTRODUCTION TO RESEARCH.—Preparation for thesis work. Library, language, manuscript, and advanced laboratory work on

assigned topics. (A three-hour course for one semester is required as a preparation for entomological thesis work.) *I or II*; (3 to 5).

Professor FORBES, Assistant Professors FOLSOM and MACGILLIVRAY

*Prerequisite*: Entomology 2, 3.

6. THESIS INVESTIGATION.—Subjects selected during the junior year. Three hours a day given to investigation, under the supervision of an instructor, during the senior year. *I, II*; (5).

Professor FORBES, Assistant Professors FOLSOM and MACGILLIVRAY

7. ELEMENTARY SYSTEMATIC ENTOMOLOGY.—The external anatomy of insects; the terminology of the parts; identification of specimens representing as many as possible of the major groups. *I or II*; (5).

Assistant Professor MACGILLIVRAY

*Prerequisite*: Entomology 2.

8. ADVANCED ECONOMIC ENTOMOLOGY.—Assigned problems. Field laboratory, insectary, library, and manuscript work, with practice in the special operations of economic entomology. (Intended primarily to prepare students for service as entomologists in experiment stations and other state and government positions. Agronomy 7 and Horticulture 1, 2, and 3 should also be taken as a part of this preparation.) *I, II*; (3).

Professor FORBES, Assistant Professor FOLSOM

*Prerequisite*: Entomology 4, 2, 3.

9. ADVANCED SYSTEMATIC ENTOMOLOGY.—The identification of the characters upon which genera and species are based. *I or II*; (5).

Assistant Professor MACGILLIVRAY

*Prerequisite*: Entomology 2, 7.

10. TAXONOMY OF IMMATURE INSECTS.—*I*; (5).

Assistant Professor MACGILLIVRAY

*Prerequisite*: Entomology 1 or 4, 2, 7.

11. CLASSIFICATION OF THE COCCIDAE.—Methods of preparing scale insects for study, the identification of genera and species, and discussion of their morphology, metamorphosis, and phylogeny. *II*; (5).

Assistant Professor MACGILLIVRAY

*Prerequisite*: Entomology 1 or 4, 2, 7.

12. SEMINAR.—Reports and discussion upon assigned topics; presentation and discussion of contents of recent entomological publications, and of results of personal research. *I, II*; (1).

*Prerequisite*: One year of entomological work.

13. MEDICAL ENTOMOLOGY.—Insects and the transmission of dis-

ease; methods of controlling such insects and preventing the disease due to them. (Primarily for advanced students preparing for medicine.) *I or II; (3).*

*Prerequisite:* Zoology 3, or its equivalent in microscopical technique.

14. **ADVANCED ECONOMIC ENTOMOLOGY.**—Personal work under direction on assigned problems in economic entomology, intended to prepare advanced students for immediate service as state and government entomologists. Advantage will be taken of the operations and practical problems of the State Entomologist's office so far as available. *I or II, and six weeks of summer vacation.*

*Prerequisite:* Courses in elementary and advanced economic entomology, and in systematic entomology.

#### COURSES FOR GRADUATES

The prerequisite for graduate work in entomology is one year's work in biological courses, including an equivalent of either Zoology 1 or Entomology 1 or 4. Entrance upon major work in entomology requires the equivalent of Entomology 2 and 3.

Graduate students who have had at least one year of college work in biological courses may take for graduate credit any of the preceding courses except 1, 4, and 6. The following courses are open to graduate students only:

102. RESEARCH IN THE MORPHOLOGY AND EMBRYOLOGY OF INSECTS. Assistant Professor FOLSOM

103. RESEARCH IN FAUNISTIC AND ECOLOGICAL ENTOMOLOGY. Professor FORBES

108. RESEARCH IN ECONOMIC ENTOMOLOGY. Professor FORBES

109. RESEARCH IN SYSTEMATIC ENTOMOLOGY. Assistant Professor MACGILLIVRAY

#### THE FINE ARTS

(See ART AND DESIGN and MUSIC. Attention is called also to the courses in esthetics offered by the departments of philosophy, education, architecture, and household science.)

#### FLORICULTURE

(See HORTICULTURE.)

#### FRENCH

(See ROMANCE LANGUAGES AND LITERATURE.)

## GEOLOGY

(Including MINERALOGY, PALEONTOLOGY, and PHYSICAL GEOGRAPHY.)

CHARLES WESLEY ROLFE, M.S., *Professor*

WILLIAM SHIRLEY BAYLEY, Ph.D., *Associate Professor*

THOMAS EDMUND SAVAGE, Ph.D., *Assistant Professor*

JOHN LYON RICH, Ph.D., *Instructor*

WALTER ELMER EKBLAW, A.B., *Assistant*

DAVID GROSH THOMPSON, A.B., *Assistant*

FRANK LESLIE FLEENER, A.B., *Assistant*

GEORGE WILLIAM HEITKAMP, A.B., *Assistant*

This department occupies a suite of twenty-seven rooms on the first and second floors of the Natural History building. Its laboratories and lecture rooms are equipped with the apparatus and illustrative material necessary to carry on the work scheduled below. The equipment for the study of crystallography, mineralogy, economic geology, paleontology, and stratigraphy is especially good. The department is also supplied with maps, charts, projection apparatus, and field and laboratory instruments for surveying and mapping.

The collections in mineralogy, petrography, and paleontology are large and well selected. The last is rich in the fossil forms which occur in the Mississippi Valley and the library is well supplied with the literature essential to their study.

The offices and laboratories of the State Geological Survey adjoin those of the department and a portion of the instructors are also engaged in work for the Survey, while others are coöperating with the United States Geological Survey, thus giving advanced students the advantages which are to be gained from close contact with practical work.

To students who are especially interested in geology the department offers three lines of work, and recommends that the courses be taken in the order indicated below.

MINERALOGY, PETROGRAPHY, ECONOMIC GEOLOGY.—For those who care particularly for minerals and rocks, their identification, origin, and transformation; the origin, characteristics, and classification of ores and the economic qualities of non-metallic minerals, it is recommended that the following courses be taken in the order given: Geology 19, 1, 1a, 5, 5a, 6, 7, 16, 15, 2.

**STRATIGRAPHY, PALEONTOLOGY.**—If the student cares more for the history of rocks, the order in which they were laid down, the conditions which gave them their peculiarities, and the evolution of living forms as shown by the succession of fossils, the following order of courses is suggested: 19, 1, 1a, 9, 16, 5, 18, 20, 22, 15, 4.

**PHYSIOGRAPHIC GEOLOGY, PHYSICAL GEOGRAPHY.**—If his interest lies more in the earth's surface, the origin of its topographic forms, the agencies which are transforming them, and the influence of these upon the welfare of plants, animals, and man, the following courses are advised, in order: 19, 23, 14, 10, 5, 1a, 11, 8, 20, 17, 24, 4. These courses will be of special interest to prospective teachers of physiography.

The attention of students who can devote but one or two semesters to the subject is directed to the following courses: For engineers, 3, 5, 13; for agriculturists, 12, 14, 8, 11; for students in commerce, 3, 14, 8; for students in literature and science, 3, 1, 1a, 10, 14, 8, 11, 22.

#### COURSES FOR UNDERGRADUATES

**1. DYNAMIC AND STRUCTURAL GEOLOGY.**—The agents and processes involved in the development of the earth's present features. Lectures; laboratory. *I*; (5). Professor ROLFE, Mr. FLEENER

*Prerequisite:* Chemistry 1 or an equivalent.

**1a. HISTORICAL GEOLOGY.**—The evolution of the earth and its life. Lectures; laboratory work, consisting largely of a study of a few of the more characteristic fossils from the various horizons. (Continuing course 1 and introducing courses 9 and 16.) *II*; (5).

Assistant Professor SAVAGE, Mr. THOMPSON

*Prerequisite:* Geology 1, 3, or 23.

**2. ECONOMIC GEOLOGY.**—The origin and manner of occurrence of minerals and rocks of economic importance, especially those found in North America. Lectures; laboratory. *II*; (3-5).

Associate Professor BAYLEY

*Prerequisite:* Geology 5; 1 and 1a, or 3.

**3. GENERAL GEOLOGY.**—Mineralogy; dynamic, historic, and economic geology; minerals; rocks; contour maps; fossils. Recitations; laboratory. (For students who wish to devote but one semester to geology.) *I or II*; (5). *Daily, with occasional trips on Saturday.* Professor ROLFE, Mr. FLEENER

**4. THESIS COURSE.**—Field or laboratory problems; complete re-

ports under the direction of an instructor; maps, sections, and figures based on observations. *II*; (5).

5. MINERALOGY.—Petrography and economic geology; the most common ores and minerals of scientific importance; crystallography; the characteristics of about 125 of the most important minerals; blow pipe analysis. Lectures; laboratory. *I*; (5).

Associate Professor BAYLEY, Mr. EKBLAW

*Prerequisite*: Chemistry 1, 2, 3.

5a. DETERMINATIVE MINERALOGY.—Laboratory: the determination of minerals. Lectures: the characteristics, origin, and transformation of minerals. *II*; (3).

Associate Professor BAYLEY, Mr. EKBLAW

*Prerequisite*: Geology 5.

6. PHYSICAL AND OPTICAL MINERALOGY.—Petrography; physical and optical properties of minerals; the practical use of polarized light in identifying the rock-forming materials. *II*; (3).

Associate Professor BAYLEY

*Prerequisite*: Geology 5.

7. PETROGRAPHY.—Rocks; their types; origin; classification; the types studied with hand specimen and thin section. Lectures; laboratory. *I*; (3).

Associate Professor BAYLEY

8. GEOGRAPHY OF EUROPE.—The continent of Europe; physiographic features, climate, and natural resources; the influence of physical conditions on present and historical development. *II*; (3).

Dr. RICH, Mr. HEITKAMP

*Prerequisite*: Geology 23, or 1 or 3 with 14.

9. PALEONTOLOGY.—Paleozoic invertebrate fossils; their classification and relationships; identification of the fossils; the literature of the subject. Lectures; laboratory. *I*; (5).

Assistant Professor SAVAGE, Mr. THOMPSON

*Prerequisite*: Geology 1a; recommended: 1 year of botany or zoology.

10. REGIONAL GEOGRAPHY.—The continents of South America, Africa, Australia, Asia, and Europe; physiographic features, drainage, climate, and resources; the people and their characteristics; the control exerted by natural geographic factors over cultural and material development. *II*; (3).

Dr. RICH, Mr. HEITKAMP

*Prerequisite*: Geology 23 or 1 or 3.

11. GEOGRAPHY OF NORTH AMERICA.—The continent of North America; physiography, climate, resources, peoples, and economic

geography; the bearings of physiographic and climatic factors on present and past development. *I*; (3). Dr. RICH, Mr. HEITKAMP

*Prerequisite:* Geology 23, or 1 or 3 with 14.

12. GEOLOGY OF SOILS.—The origin of the various classes of soils; mineral compositions; physical characteristics; transformations. (Particularly valuable to students of agriculture and all those who are especially interested in plant growth.) *II*; (5).

Professor ROLFE, Mr. FLEENER

*Prerequisite:* Chemistry 1 or an equivalent.

13. ENGINEERING GEOLOGY.—(Planned especially to meet the needs of engineering students; open only to students in engineering and ceramics.) Lectures; laboratory. *II*; (5).

Associate Professor BAYLEY, Mr. EKBLAW

14. METEOROLOGY.—The heating and cooling, pressure, circulation, and moisture of the atmosphere; storms, and storm and weather forecasting; rainfall, climate. (Course 14 should be taken by all those who intend to do more than the most elementary work in geography, and, with course 8, should be taken with Economics 26 by students of commerce.)

Dr. RICH, Mr. HEITKAMP

15. STRUCTURAL GEOLOGY.—The arrangement of the rocks which form the earth's crust and their distribution on its surface; mountains; faults; folds; other diastrophic phenomena. *I*; (5).

Associate Professor BAYLEY

*Prerequisite:* Geology 1a.

16. STRATIGRAPHY.—The methods and criteria employed in the correlation of strata; the distribution of the successive geologic formations; the characteristic invertebrate faunas contained. Lectures; laboratory. *II*; (5). Assistant Professor SAVAGE, Mr. THOMPSON

*Prerequisite:* Geology 9.

17. CONTINENTAL EVOLUTION.—The development of continents; the distribution of the strata of the successive geological systems; the character and variations of the sediments in each period with their faunas; the distribution of lands and seas, and their relative altitude in geologic ages. *I*; (5). Assistant Professor SAVAGE

*Prerequisite:* Geology 1a or 11.

18. MESOZOIC AND TERTIARY PALEONTOLOGY.—The mesozoic and tertiary invertebrate fossil forms; the evolution of vertebrates during the same periods. (For students specializing in botany or zoology.) *II*; (5).

Assistant Professor SAVAGE

*Prerequisite:* Geology 1a, 9; or 10 credits in botany or zoology.

19. FIELD GEOLOGY—INTRODUCTORY COURSE.—Field trip of two weeks, in September, 1912, introductory to the courses in general geology and physiography. Including points in Indiana, Ohio, and the Wyandotte or Mammoth Cave, to illustrate the marked difference between the physiographic features of youthful and mature topography and of glaciated and non-glaciated areas; collection of fossils from the different rock exposures; their use in determining the age of strata. (Expenses about \$35.00.) Credit given on completion of a semester course in geology and on submission of written report on the observations and collections made during the trip. *I*; (2). Assistant Professor SAVAGE

20. FIELD GEOLOGY.—The field determination of physical features and rock formations, with mapping and description, of a selected area. (A short field course.) Assistant Professor SAVAGE

23. PHYSIOGRAPHY.—The earth's surface: its salient features, their origin, modification, and interrelationships; agencies and processes of change; meteorology; oceanography. (A general introductory course in physiography; should precede all further work in geography or physiography.) *I*; (5). Dr. RICH, Mr. HEITKAMP

21. GEOLOGY OF COAL.—The origin of coal; coal sampling; the stratigraphy of the coal measure deposits of North America, with special reference to the Illinois or Eastern Interior basin. *I*; (2). Assistant Professor SAVAGE

*Prerequisite:* Geology 13 or an equivalent.

22. ORGANIC EVOLUTION.—The evolution of plant and animal forms as indicated by the fossil record. *II*; (3). Assistant Professor SAVAGE

*Prerequisite:* Geology 1a, or one semester of zoology or botany.

24. GEOMORPHOLOGY.—Earth features and the influence of climatic conditions, character and attitude of the rocks, and diastrophic movements on surface forms. (An introduction to the literature of physiography; should be taken by all who intend to teach or to specialize in geography or geology.) *II*; (3). Dr. RICH

*Prerequisite:* Geology 1 or 3 or 23 and 1a.

#### COURSES FOR GRADUATES

Graduate students who are doing their principal work in other departments before taking work for graduate credit in geology must have had the equivalent of 10 sequential university credits in geology, 10 in chemistry, and 8 in physics.

Students who are candidates for an advanced degree in geology



must have had the equivalent of 20 sequential university credits in geology, 10 in chemistry, 8 in physics, and, if the work is to be along the lines of stratigraphy or paleontology, 10 in zoology or botany.

101. ADVANCED CRYSTALLOGRAPHY.—The methods of measuring, projecting, and calculating crystal forms; the physical properties of crystallized bodies; indices of refraction; electrical properties; morphotropism. *Three to five times a week; I or II.*

Associate Professor BAYLEY

102. PETROGRAPHY.—The igneous rocks; identification of types; classification; relationships. Lectures; laboratory. *Two hours, five times a week; I.*

Associate Professor BAYLEY

103. PETROGRAPHY.—Schists and sedimentary rocks. *Two hours, five times a week; I.*

Associate Professor BAYLEY

105. INVERTEBRATE PALEONTOLOGY.—The literature and fossils of a special geological system; their geographic distribution; the geologic provinces; the origin and the routes of migration of the different faunas during the period. Largely individual work. *Three to five times a week; I, II.*

Assistant Professor SAVAGE

106. FIELD AND LABORATORY COURSE.—The geology and paleontology of a selected area in Illinois; report on the geology of the region, based on the data collected in the field. *Three to five times a week; I, II.*

Assistant Professor SAVAGE

107. AREAL AND STRUCTURAL GEOLOGY.—Individual work on some area exhibiting important structural or economic features. *Once a week.*

Associate Professor BAYLEY

124. ADVANCED PHYSIOGRAPHY.—Individual work on field problems; advanced literature of physiography and geomorphology. *One to three times a week; I, II.*

Dr. RICH

## GERMANIC LANGUAGES AND LITERATURE

(Including SCANDINAVIAN)

JULIUS GOEBEL, Ph.D., *Professor*

OTTO EDUARD LESSING, Ph.D., *Associate Professor*

GEORGE HENRY MEYER, A.M., *Assistant Professor*

NEIL CONWELL BROOKS, Ph.D., *Assistant Professor*

GEORGE TOBIAS FLOM, Ph.D., *Assistant Professor, Scandinavian*

DAISY LUANA BLAISDELL, A.M., *Instructor*

CHARLES MARSHALL POOR, Ph.D., *Instructor*

CHARLES ALLYN WILLIAMS, Ph.D., *Instructor*

LEONARD BLOOMFIELD, Ph.D., *Instructor*

ARMIN HAJMAN KOLLER, Ph.D., *Instructor*

PHILIP STEPHAN BARTO, A.M., *Assistant*

FELIX EMIL HELD, A.M., *Assistant*

## GERMAN

### *Honors*

Candidates for honors in German must offer:

1. A minor of at least 12 hours in some other language; if this be English it must be exclusive of English 1 and work in rhetoric; if it be French or Spanish it must be exclusive of the first year's work.

2. A minor of at least 12 hours in any one of the other humanities, provided that the courses chosen contribute in a reasonable degree to the student's knowledge of European civilization. In order to be sure that the work offered will be accepted as fulfilling this general purpose, students are urged to consult with the department in planning their work in their minor subjects.

3. A general knowledge of European history, such as is gained from History 1, or an equivalent course.

4. An acceptable thesis; it may be one written in connection with some course.

### FIRST-YEAR COURSES

1. ELEMENTARY COURSE.—Grammar and easy reading. *I*; (4). Assistant Professor MEYER, Assistant Professor BROOKS, Miss BLAISDELL, Dr. POOR, Dr. WILLIAMS, Dr. BLOOMFIELD, Mr. BARTO, Mr. HELD

3. NARRATIVE AND DESCRIPTIVE PROSE.—Grammar and syntax; reading of easy texts; exercises in prose composition. *II*; (4).

Assistant Professor MEYER, Assistant Professor BROOKS, Miss BLAISDELL, Dr. WILLIAMS, Dr. BLOOMFIELD, Dr. KOLLER, Mr. BARTO, Mr. HELD

*Prerequisite:* German 1, or one year of high school German.

NOTE.—Three sections of German 3 will be offered in the first semester.

## SECOND-YEAR COURSES

4. DESCRIPTIVE AND HISTORICAL PROSE.—Selections from standard prose writers; sight reading; prose composition. *I*; (4).

Miss BLAISDELL, Dr. POOR, Dr. WILLIAMS, Dr. BLOOMFIELD, Dr. KOLLER, Mr. BARTO, Mr. HELD

*Prerequisite:* German 1 and 3, or two years of high school German.

NOTE.—Three sections of German 4 will be offered in the second semester.

5. INTRODUCTION TO THE CLASSICS.—Schiller's *Jungfrau von Orleans*; Goethe's *Hermann und Dorothea*; or others of the classics. Prose composition. (Two sections of German 5 will be offered in the first semester.) *II*; (4).

Miss BLAISDELL, Dr. POOR, Dr. WILLIAMS, Dr. KOLLER, Dr. BLOOMFIELD

*Prerequisite:* German 4, or three years of high school German.

6. SCIENTIFIC PROSE.—The rapid reading of works of a general scientific character. *II*; (4). Dr. WILLIAMS, Dr. KOLLER, Mr. HELD

*Prerequisite:* German 4.

## THIRD-YEAR COURSES

Not more than ten hours of these courses may be counted towards a major without the approval of the head of the department.

7. MODERN FICTION.—(Intended primarily for students who take German 5 in the first semester; not open to those who have had any work more advanced than German 5.) Two sections. *II*; (3).

Miss BLAISDELL, Dr. POOR

*Prerequisite:* German 5, or equivalent.

10. INTRODUCTORY GOETHE COURSE.—Reading of works illustrating different periods in Goethe's development: *Götz von Berlichingen*; *Egmont*; *Iphigenie auf Tauris*; selections from *Dichtung und Wahrheit*. *II*; (3).

Assistant Professor MEYER, Assistant Professor BROOKS

*Prerequisite:* German 14, or 24, or 16.

14. INTRODUCTORY SCHILLER COURSE.—Reading of works illustrating different periods in Schiller's development: Lyrics and ballads; *Kabale und Liebe*; *Brant von Messina*. (Not open to freshmen.) *I*; (3).

Assistant Professor BROOKS

*Prerequisite:* German 5 or its equivalent.

16. ELEMENTARY PROSE COMPOSITION.—Two sections. *I*; (2).

Miss BLAISDELL, Dr. POOR, Dr. WILLIAMS

*Prerequisite*: German 5, or equivalent.

NOTE.—One section of German 16 is offered in the second semester.

17. INTERMEDIATE PROSE COMPOSITION.—(Two sections.) *II*; (3).  
Miss BLAISDELL, Dr. WILLIAMS

*Prerequisite*: German 16.

24. MODERN DRAMA.—Rapid reading of dramas by Grillparzer, Hebbel, Wildenbruch, and others. (Not open to freshmen.) *I*; (3).

Dr. POOR

*Prerequisite*: German 5 or its equivalent.

28. GERMAN LYRICS.—*First semester*: The chief lyric poets of the classical period. *Second semester*: The chief lyric poets of the nineteenth century. The form, development, and different types of the lyric. (Each semester may be taken separately, although students are not advised to take the second without the first. Not open to freshmen.) *I*, *II*; (2).

Assistant Professor MEYER

*Prerequisite*: For first semester, German 5 or equivalent; for second semester, German 14, or 16, or 24, or first semester of 28.

#### PRIMARILY FOURTH-YEAR COURSES

8. SCHILLER.—The life of Schiller; *Wallenstein* and other selections. *I*; (3).

Associate Professor LESSING

*Prerequisite*: German 10, or 14, or 28.

- [9a. GOETHE'S FAUST.—The Faust legend and early Faust books and plays; the genesis of Goethe's *Faust*; reading of both parts. *I*, *II*; (2). Not given in 1912-13.

Professor GOEBEL]

- 9b. GOETHE AND SCHILLER.—Interpretation of Goethe's poems. Goethe's *Tasso*; Schiller's *Ueber naive und sentimentalische Dichtung*. *I*, *II*; (2).

Professor GOEBEL

11. GERMAN LITERATURE AFTER THE REFORMATION.—Lectures; recitations; reports on assigned collateral reading. *II*; (3).

Associate Professor LESSING

*Prerequisite*: German 26.

25. TEACHER'S COURSE.—Discussion of methods; examination of text-books. (Open to seniors and special students who have 20 hours' credit in German.) *II*; (2).

Assistant Professor BROOKS

*Prerequisite*: First semester of German 29 or equivalent; completion of or registration in Education 1 or equivalent.

26. GERMAN LITERATURE BEFORE THE REFORMATION.—Lectures; recitations; reports on assigned reading. *I*; (3).

Associate Professor LESSING

*Prerequisite:* German 10, or 24, or 28.

27. LESSING.—The life of Lessing; *Nathan der Weise*; *Emilia Galotti*, and other selections. *II*; (3). Associate Professor LESSING

*Prerequisite:* German 8, or 10, or first semester of 9 or 29.

29. ADVANCED PROSE COMPOSITION.—Themes on Germany and German life, based on suitable reading, discussed in German. *I, II*; (3). Dr. KOLLER

*Prerequisite:* German 17.

30. THESIS COURSE.—(Intended primarily for candidates for honors in German, but open to other seniors.) *I, II*; (1 or 2).

Professor GOEBEL, Associate Professor LESSING, Assistant Professor MEYER, Assistant Professor BROOKS

31. MIDDLE HIGH GERMAN.—*I*; (2). Professor GOEBEL

*Prerequisite:* Senior or graduate standing; at least three years of German.

Courses 9, 11, 29, and 31 are especially recommended to all candidates for graduate scholarships in German; these same courses, together with Course 25, are recommended to seniors who expect to teach German.

#### COURSES FOR GRADUATES

Students desiring to take German as a major are expected to have finished successfully a four years' course of undergraduate work in German, corresponding to the four years' course in German at this University. They are expected to be familiar with the principal works of the writers of the classical and modern periods of German literature, to show a general knowledge of the history of German literature and to be able to follow lectures in the German language.

Of collateral subjects, a reading knowledge of Latin and French is required. It is desirable that candidates for the degree of Ph.D. have some knowledge of Greek. All students are expected to have had a course in German History.

101. SEMINAR IN GERMANIC PHILOLOGY.—Schiller's *Philosophic Poems*. Training in original research; results of value may be published in the *Journal of English and Germanic Philology*. *Once a week*; *I, II*. Professor GOEBEL

[103. INTRODUCTION TO THE HISTORICAL STUDY OF THE GERMANIC LANGUAGES.—History of German Philology; comparative grammar of the Old Germanic dialects. Lectures; discussions of special topics. *Twice a week; II.* Not given in 1912-13. Professor GOEBEL]

104. GOTHIC.—Grammar and literature. *Twice a week; I.*

Professor GOEBEL

105. OLD HIGH GERMAN.—Grammar and interpretation of the oldest literary documents. *Three times a week; II.*

Dr. BLOOMFIELD

109. GOETHE'S AND SCHILLER'S PHILOSOPHY.—*Twice a week; I, II.*

Professor GOEBEL

110. EARLY GERMAN DRAMA.—German drama up to the Reformation; medieval religious drama; Shrovetide plays; beginnings of the humanistic drama. *Twice a week; I.* Assistant Professor BROOKS

113. GERMAN LITERATURE OF THE FIFTEENTH AND SIXTEENTH CENTURIES.—Survey of the literature on the back-ground of the general history of the time; Luther and the reformation; master-singers and folksong; the reformation drama; Hans Sachs; Brant; Fischart; the chap books, the English comedians. *Twice a week; II.*

Assistant Professor BROOKS

115. HISTORY OF GERMAN LITERATURE FROM GOETHE'S DEATH TO THE PRESENT TIME.—*Twice a week; I, II.*

Associate Professor LESSING

116. MEDIEVAL GERMAN LITERATURE WITH REFERENCE TO THE POLITICAL, RELIGIOUS, AND SOCIAL HISTORY.—Research. *Twice a week; I.*

Associate Professor LESSING

[117. HISTORY OF GERMAN LITERATURE DURING THE EIGHTEENTH CENTURY.—*I.* Not given in 1912-13. Professor GOEBEL]

[118. THE GERMAN DRAMA SINCE SCHILLER.—Research. *Twice a week; I, II.* Not given in 1912-13. Associate Professor LESSING]

[119. THE GERMAN NOVEL.—Research. *Twice a week; I, II.* Not given in 1912-13. Associate Professor LESSING]

121a. THE NIBELUNGENLIED.—Lectures and interpretations. *Twice a week; II.*

Professor GOEBEL

[124. HISTORY OF THE DRAMA.—The beginnings of the drama and its development in the eighteenth century. *Twice a week; I.* Not given in 1912-13. Assistant Professor MEYER]

## SCANDINAVIAN

## UNDERGRADUATE COURSES, NOT OPEN TO FRESHMEN

[1. ELEMENTARY NORWEGIAN.—Grammar, reading, and introduction to the literature. *I, II*; (3). Not given in 1912-13.

Assistant Professor FLOM]

2. ELEMENTARY SWEDISH.—Grammar and reading of easy prose; Selma Lagerlöf's *En Herrgardssägen*, and Runeberg's *Fänrik Stals Sägner*. *I*; (2).

Assistant Professor FLOM

3. IBSEN'S *Brand* AND *Peer Gynt*.—Advanced Norwegian. Interpretation of the two dramas; the language and style. Olsen's *Brand*. *II*; (2).

Assistant Professor FLOM

*Prerequisite*: Course I or the equivalent.

[4. ESAIAS TEGNER.—Tegner's *Frithjofs Saga*; genesis, development, and influence. Lectures on Swedish romanticism and "The Gothic School." *II*; (2). Not given in 1912-13.

Assistant Professor FLOM]

[5. HENRIK IBSEN.—Lectures and interpretation of selected works. Early influences; development of his view of life. *II*; (2). Not given in 1912-13.

Assistant Professor FLOM]

6. IBSEN'S SOCIAL DRAMAS.—Lectures; interpretation of four of the social dramas; Ibsen's technique. Archer's translation is used. *II*; (2).

Assistant Professor FLOM

*Prerequisite*: Junior standing.

12. NORSE MYTHOLOGY.—Primitive religion; the religious belief of the Norseman in pre-Christian times; interpretation of the principal myths; theogony, cosmogony, and the myth of the end of the world. *I*; (2).

Assistant Professor FLOM

## ADVANCED COURSE FOR UNDERGRADUATES AND GRADUATES

[11. SURVEY OF THE HISTORY OF THE SWEDISH LANGUAGE AND LITERATURE.—Lectures. Not given in 1912-13.

Assistant Professor FLOM]

## COURSES FOR GRADUATES

Preparation for graduate work in the Scandinavian languages or literature must include a reading knowledge of one of the Scandinavian languages and systematic work in the undergraduate courses in Scandinavian or their equivalent. Any graduate student in language may, however, be admitted to the purely philological courses.

101. OLD NORSE.—Introduction to the language as a member of

the Germanic group. Reading of the *Volsungasaga* with selections from the King's Sagas. *I, II.* Assistant Professor FLOM

103. OLD SWEDISH.—Introduction to the language. Noreen's *Altschwedische Grammatik* and *Lesebuch.*

Assistant Professor FLOM

110. ADVANCED OLD NORSE.—Mythical lays of the *Elder Edda.* *Twice a week; I.* Assistant Professor FLOM

130. THE RUNIC INSCRIPTIONS.—Lectures on the runes and interpretation of the Germanic and Scandinavian inscriptions; Germanic grammar. *Twice a week; II.* Assistant Professor FLOM

150. RESEARCH.—Special problems. Assistant Professor FLOM

## GREEK

(See THE CLASSICS.)

## HISTORY

\*EVARTS BOUTELL GREENE, Ph.D., *Professor*

GUY STANTON FORD, Ph.D., *Professor*

CLARENCE WALWORTH ALVORD, Ph.D., *Associate Professor*

LAURENCE MARCELLUS LARSON, Ph.D., *Associate Professor*

WILLIAM SPENCE ROBERTSON, Ph.D., *Assistant Professor*

SOLON JUSTUS BUCK, Ph.D., *Research Associate*

ARTHUR CHARLES COLE, Ph.D., *Instructor*

AUGUST CHARLES KREY, A.M., *Instructor*

ELIZABETH PARNHAM BRUSH, A.M., *Assistant*

PAUL FREDERICK REIFF, Ph.D., *Research Assistant*

Students who expect to teach history or to make that subject a major are advised to take History 1 during their freshman year. For the sophomore year History 3, 11, and 23 are recommended. During the junior and senior years students may select courses from groups B and C, in accordance with their individual tastes and interests. For those who expect to teach in secondary schools some work in ancient history is desirable.

The importance of thorough linguistic training is also emphasized, especially in Latin, French, and German.

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\* On leave, February 1, 1912, to February 1, 1913.



*Honors*

Candidates for honors in history must offer:

1. Not less than 24 hours in this subject, including History 1 and 3, at least 3 hours of English history, and at least 6 hours in Group C.

2. Two minor subjects aggregating at least 24 hours, approved by the department, including in each case some advanced work. The minors must be selected from the following list: Economics; political science; philosophy, including a course in logic and one in the history of philosophy (One course in education or psychology may be accepted as a part of the requirement in philosophy.); English literature, not including English 1; the classics. Economics or political science must be offered as one of the minor subjects. The ability to read simple prose in one foreign language is ordinarily expected of candidates in history, and students who have pursued the study of Romance languages or Germanic languages so far as to include courses in the history of literature may count one of these subjects as a minor.

A. COURSES OPEN TO FRESHMEN

(Seniors taking these courses may receive half credit only.)

I. CONTINENTAL EUROPEAN HISTORY.—Europe from the fourth century to the present time. (The work of neither semester may be taken separately without special permission.) *I, II; (4).*

Professor FORD, Mr. KREY, Miss BRUSH

II. HISTORY OF ENGLAND TO 1589.—This course may be combined with English economic history, (Economics 7), or Continental European history (History 1). *II; (3).* Associate Professor LARSON

B. UNDERGRADUATE COURSES NOT OPEN TO FRESHMEN

3. HISTORY OF THE UNITED STATES.—*First Semester:* The Colonial era; the Revolution; genesis of the federal constitution. *Second semester:* The United States under the constitution. (The work of either semester may be taken separately.) *I, II; (3).*

Professor GREENE, Assistant Professor ROBERTSON, Dr. COLE  
*Prerequisite:* One year of college work.

5. HISTORY OF GREECE.—*I, II; (3).* See Greek 20.

6. HISTORY OF ROME.—*I, II; (3).* See Latin 19.

7. THE REVOLUTIONARY AND NAPOLEONIC ERA.—French conditions in the eighteenth century before 1774; the events between 1774

and 1789 which precipitated the revolution in France; the reform work of the early revolution; the Napoleonic regime in France and Europe. *I*; (3). Professor FORD

*Prerequisite:* History 1.

17. THE HISTORY OF ILLINOIS.—The development of a typical commonwealth in the Middle West. *I*; (2).

Associate Professor ALVORD

*Prerequisite:* History 3.

18. THE TEACHING OF HISTORY.—Preparation of students for the practical problems of historical teaching in secondary schools. *II*; (2).

Associate Professor LARSON, and other members of the department

*Prerequisite:* History 1, 3 or their equivalents; senior standing.

20. EUROPE IN THE NINETEENTH CENTURY.—The national movements of the nineteenth century and those European conditions which form the basis of modern world politics. *II*; (3).

Professor FORD

*Prerequisite:* History 1

23. HISTORY OF MODERN ENGLAND.—(A continuation of History II, following the same general plan; but emphasizing the colonial and imperial phases of English history.) *I*; (3). Dr. COLE

*Prerequisite:* History I or II.

#### C. COURSES FOR GRADUATES AND QUALIFIED UNDERGRADUATES

(The ability to use French and German is desirable in all of these courses and is essential in some of them.)

4. THE CONSTITUTIONAL HISTORY OF ENGLAND.—*First semester:* institutional origins; *second semester:* modern constitutional practice. (For students who wish to specialize in English history, political science, or law.) *I, II*; (3). Associate Professor LARSON

*Prerequisite:* One year of college history.

8. MEDIEVAL CIVILIZATION.—Religious, economic, and intellectual development of medieval society; social changes and the growth of culture in England; English sources; corresponding movements on the continent. *I*; (3). Associate Professor LARSON

9. THE ERA OF THE RENAISSANCE.—Political, religious, and economic history of Europe during the fourteenth and fifteenth centuries; the intellectual and artistic revival. (Continuation of course 8; either may be taken separately.) *II*; (3).

Associate Professor LARSON, Mr. KREY

10. THE DEVELOPMENT OF AMERICAN SOCIETY IN THE EIGHTEENTH CENTURY.—An introduction to the study of the American Revolution. *II*; (4). Professor GREENE

[12. HISTORY OF GERMANY.—Settlement; eastern expansion; development of German cities; the Reformation; rise and development of Brandenburg-Prussia since 1640; *I, II*; (2). Not given in 1912-13. Professor FORD]

[14. THE MAKING OF THE FEDERAL CONSTITUTION.—The events from 1783-1789 which resulted in the framing and ratification of the federal convention of 1787; the contemporary arguments for and against the ratification of the Constitution. *II*; (3). Not given in 1912-13. Professor GREENE]

15. AMERICAN HISTORY, 1820-1865.—Expansion; slavery; sectionalism; the Civil War. *II*; (3). Dr. COLE

*Prerequisite*: History 3.

16. THE HISTORY OF THE EXPLORATION AND COLONIZATION OF THE WEST FROM THE EARLIEST TIMES TO 1818.—The struggle of France, Great Britain, Spain, and the United States for the possession of the West; the colonial policy followed by each nation. *I*; (2). Associate Professor ALVORD

*Prerequisite*: History 3.

21. THE HISTORY OF THE UNITED STATES SINCE THE CIVIL WAR.—Historical introduction to contemporary American politics. *I*; (3). Assistant Professor ROBERTSON

*Prerequisite*: History 3.

26. THE HISTORY OF THE LATIN-AMERICAN COLONIES.—The political, economic, social, and intellectual life of Spain during the period of discovery; the exploration, settlement, and civilization of Spanish-America and the Philippines; the exploration and colonization of Brazil. *I*; (2). Assistant Professor ROBERTSON

*Prerequisite*: History 1 or 3.

27. THE HISTORY OF LATIN-AMERICA FROM THE WARS OF INDEPENDENCE TO THE PRESENT TIME.—The national history of the leading Latin-American states; political parties; existing governments; relations with Europe and the United States. The old regime in Texas, Mexico, and California. *II*; (2).

Assistant Professor ROBERTSON

*Prerequisite*: History 3.

28. THESIS.—(For candidates for honors and for other seniors who wish special training in investigation.) *I, II; (2).*

Assistant Professor ROBERTSON and other members of the department

#### COURSES FOR GRADUATES

Graduate courses in history at the University of Illinois are of three kinds; 1. Instruction in methodology, historiography, and bibliography. This work (in course 103) is required of all graduate students in history during their first year. 2. Seminar courses for the study of special fields with a view primarily to training in the methods of historical criticism and research. 3. Courses for information and guidance in general reading.

Research work is offered in the following fields: Medieval history; English history with emphasis upon medieval institutions; modern European history with special reference to the rise of Prussia and the revolutionary and the Napoleonic era; American history with special reference to institutions, colonial society, western development, and the period 1820-65; the history of Latin America.

A student entering upon graduate work should have had at least the equivalent of the introductory college courses in English, Continental European, and American history. All students of history should have a reading knowledge of German and French; for medieval history some knowledge of Latin is indispensable, and in certain fields of American history Spanish is needed.

Attention is called to the fact that the University of Illinois has for some time cooperated with the Illinois State Historical Society and the trustees of the State Historical Library, in the gathering and editing of archive material. As a result of this relation instructors and graduate students in the department have contributed to the publications of these state organizations and have been given useful training in the study of manuscript and printed material.

The Historical Club, consisting of instructors and graduate students in the department, meets once a month. The program is devoted to reviews of current progress in historical work and the results of the investigations of the members.

ILLINOIS SURVEY.—Students of history also have an opportunity to pursue research in western history in connection with the Illinois Survey.

The Illinois Survey is the name given to work which has been carried on at the University for several years in the study of Illinois as a typical Mississippi Valley state. The purpose is to write the history of the State from all points of view. Therefore various departments are engaged in the work. A great deal of material has been gathered and considerable work done so that there is abundant research material for students interested in this field.

101. SEMINAR IN AMERICAN HISTORY.—General bibliography of American history; cooperative study of typical problems. *Two hours, once a week; I, II.*

Professor GREENE, Associate Professor ALVORD, Dr. BUCK

102. STUDIES IN ENGLISH HISTORY.—*Twice a week; I, II.*

Associate Professor LARSON

103. HISTORICAL BIBLIOGRAPHY AND CRITICISM.—Selected problems in various fields. (Required of all candidates for an advanced degree in history who do not present evidence of similar training elsewhere. *Twice a week; I, II.* Professor FORD and others

104. SEMINAR IN MODERN EUROPEAN HISTORY.—The diplomatic relations between France and Prussia in the period of the French Revolution. *I, II.* Professor FORD

105. THE HISTORY OF WESTERN EXPANSION, 1763-1818.—Lectures; readings; problems in the interpretation of western history. *Once a week; I, II.* Associate Professor ALVORD

111. SPANISH-AMERICAN RELATIONS.—The relations of the Latin-American states with Europe and the United States; the Monroe Doctrine; the development of international trade, etc. A reading knowledge of either French or Spanish is expected.) *Once a week; I, II.* Assistant Professor ROBERTSON

[112. SELECTED TOPICS IN THE HISTORY OF THE AMERICAN COLONIES IN THE EIGHTEENTH CENTURY.—*Two hours a week; II.* Not given in 1912-13. Professor GREENE]

## HORTICULTURE

JOSEPH CULLEN BLAIR, M.S.A., *Professor, Pomology*

JOHN WILLIAM LLOYD, M.S.A., *Professor, Olericulture*

CHARLES SPENCER CRANDALL, M.S., *Professor, Pomology*

HERMAN BERNARD DORNER, B.S., *Assistant Professor, Floriculture*

BETHEL STEWART PICKETT, M.S., *Assistant Professor, Pomology*

WILHELM MILLER, Ph.D., *Assistant Professor, Landscape Horticulture*

ERNEST WINFIELD BAILEY, M.S., *Associate, Pomology*  
 CHARLES ELMER DURST, B.S., *Instructor, Olericulture*  
 ARNO H NEHRLING, *Instructor, Floriculture*  
 RALPH RODNEY ROOT, M.L.A., *Instructor, Landscape Gardening*  
 SIMEON JAMES BOLE, A.M., *Instructor, Pomology*  
 JOHN JOSEPH GARDNER, B.S.A., *Instructor, Pomology*  
 LAWRENCE EARL FOGELSONG, B.S., *Instructor, Pomology*  
 HORACE WHITTIER PEASLEE, *Instructor, Landscape Design*

## COURSES FOR UNDERGRADUATES

Floriculture: Horticulture 4, 15a, 15b, 19a, 19b, 30, 31, 32, 35

Forestry: Horticulture 9

General Horticulture: Horticulture 1a, 1b, 5, 6, 7, 11, 12

Landscape Gardening: Horticulture 10a, 10b, 23a, 23b, 24a, 24b,  
 25a, 25b, 27, 28, 36

Olericulture: Horticulture 3, 20, 34

Pomology: Horticulture 2, 8, 17, 18, 33

1a. ELEMENTS OF HORTICULTURE.—Fruit growing, vegetable gardening, and ornamental planting, with special reference to the farm home. (Required of all freshmen in the general course in agriculture.) Lectures; assigned readings; practical exercises. *I*; (2).

Professor LLOYD, Assistant Professor PICKETT, Mr. BOLE, Mr. ROOT

1b. ELEMENTS OF HORTICULTURE.—(Continuation of 1a. Required of all freshmen in the general course in agriculture.) *II*; (2).

Professor LLOYD, Assistant Professor PICKETT, Mr. BOLE, Mr. ROOT

2. SMALL FRUITS AND GRAPES.—The strawberry, raspberry, blackberry, dewberry, currant, gooseberry, grape. History; extent of cultivation; soil; location; fertilizers; propagation; planting; tillage; pruning; insect enemies; diseases; varieties; harvesting; marketing. Lectures; reference readings. *II*; (2).

Assistant Professor PICKETT, Mr. BOLE, Mr. GARDNER

*Prerequisite*: Horticulture 1a and 1b or their equivalents, 5.

3. VEGETABLE GARDENING.—Cultural requirements of each of the common vegetables. Lectures; one practical exercise a week. *II*; (3).

Professor LLOYD, Mr. DURST, Mr. GARDNER

*Prerequisite*: Horticulture 1a and 1b or their equivalents.

4. PLANT HOUSES.—Construction, cost, and maintenance; heating; ventilating. *I*; (3).

Assistant Professor DORNER

5. PLANT PROPAGATION.—Grafts; buds; layers; cuttings; seeds. Lectures; laboratory; quizzes. *II*; (5).

Assistant Professor DORNER, Mr. NEHRING

6. NURSERY METHODS.—Some details of nursery management and their relation to horticulture. Lectures; reference readings. *II*; (2). Assistant Professor PICKETT, Mr. BAILEY, Mr. GARDNER

*Prerequisite:* Horticulture 5; Entomology 4.

7. SPRAYING.—Materials, appliances, and methods employed in combating insects and fungous diseases. Lectures; reference readings, laboratory; field work. *II*; (3).

Professor LLOYD, Mr. BOLE, Mr. GARDNER

*Prerequisite:* Horticulture 1a and 1b or their equivalents; Chemistry 1; Entomology 4.

8. ORCHARDING.—Pomaceous, drupaceous, and nut fruits; management of large commercial orchards; harvesting; grading; packing; storing; marketing. *I*; (5).

Professor CRANDALL, Assistant Professor PICKETT, Mr. BAILEY

*Prerequisite:* Horticulture 1a and 1b or their equivalents, 5; Botany 1; Entomology 4.

[9. FORESTRY.—Forest trees; uses; distribution; artificial production; relations of forest and climate; forestry legislation and economy. *II*; (2). Not given in 1912-13.

*Prerequisite:* Botany 1, or an equivalent.]

10a. LANDSCAPE GARDENING.—Plant studies; field trips; text books; lectures; drafting. (Open to all students.) *I*; (3).

Mr. Root

10b. LANDSCAPE GARDENING.—(Continuation of 10a.) *II*; (3).

Mr. Root

*Prerequisite:* Horticulture 10a.

11. STUDY OF CULTIVATED PLANTS.—The relationship and classification of certain economic and ornamental plants of the temperate zone; identification of species; examination of living plants and herbarium specimens. Lectures; assigned readings. *I*; (2).

Professor BLAIR, Professor CRANDALL

*Prerequisite:* Botany 2.

12. EVOLUTION OF HORTICULTURAL PLANTS.—History, botanical classification, and geographical distribution of cultivated plants; modification under culture; theoretical causes and observed factors

that influence variation; particularly food supply, climate, and cross-fertilization. *I*; (3). Professor CRANDALL, Mr. BOLE

*Prerequisite:* Two years of university work, including Horticulture 8 and Botany 2.

15a. PRINCIPLES OF PLANT GROWING.—Preparation of soils for greenhouse crops; fertilizers; potting and shifting plants; watering. Lectures; practical greenhouse work. *II*; (5).

Assistant Professor DORNER, Mr. NEHRLING

*Prerequisite:* Horticulture 5; Botany 1.

15b. COMMERCIAL CROPS.—Greenhouse plants and cut flowers for wholesale and retail markets; the care and marketing of the crops. Lectures; greenhouse work. *I*; (5).

Assistant Professor DORNER, Mr. NEHRLING

*Prerequisite:* Horticulture 15a.

17. COMMERCIAL FRUIT CULTURE.—Practical work in houses and fruit plantations. (For students specializing in horticulture). *I*; (5). Professor CRANDALL, Assistant Professor PICKETT, Mr. BOLE

*Prerequisite:* Horticulture 2, 8; Economics 2.

18. EXPERIMENTAL HORTICULTURE.—Methods and difficulties in horticultural investigations; the planning of experiments; recording and interpretation of results. (For advanced students preparing for Experimental Station work.) *II*; (5).

Professor BLAIR, Professor LLOYD, Professor CRANDALL

*Prerequisite:* Twenty hours' work in horticulture.

19a. AMATEUR FLORICULTURE.—Window gardening; growing of flowers upon the home grounds; containers; potting soils; fertilizers; preparation and planting of flower beds; propagation and culture of plants suitable for window and garden. *I*; (1). Mr. NEHRLING

19b. AMATEUR FLORICULTURE.—(Continuation of 19a.) *II*; (1).

Mr. NEHRLING

20. MARKET GARDENING.—Growing and handling vegetables for market. Practical exercises; reference readings. *II*; (3).

Professor LLOYD, Mr. DURST

*Prerequisite:* Horticulture 3; Economics 2.

22. SPECIAL INVESTIGATION AND THESIS WORK.—*I*, *II*; (5-10).

23a. LANDSCAPE DESIGN.—The composition of public and private estates; plans; reference reading. *I*; (3). Mr. ROOT

*Prerequisite:* Horticulture 10b.



23b. LANDSCAPE DESIGN.—(Continuation of 23a.) *II*; (3).

Mr. Root

*Prerequisite:* Horticulture 23a.

24a. ORNAMENTAL TREES AND SHRUBS.—Hard wooded ornamental plant material,—characters, culture, suitability for landscape compositions; problems in arrangement; planting plans. Field trips in fall and spring; planting plans in winter months. *I*; (3).

Mr. Root

*Prerequisite:* Horticulture 10b.

24b. ORNAMENTAL TREES AND SHRUBS.—(Continuation of 24a.) *II*; (3).

Mr. Root

*Prerequisite:* Horticulture 24a.

25a. ADVANCED LANDSCAPE DESIGN.—Problems in park design; playgrounds; large private estates; cemeteries; boulevards. *I*; (3, or more by special arrangement).

Mr. Root

*Prerequisite:* Horticulture 23b.

25b. ADVANCED LANDSCAPE DESIGN.—(Continuation of 25a.) *II*; (3, or more by special arrangement).

Mr. Root

*Prerequisite:* Horticulture 25a.

27. LANDSCAPE PRACTICE.—Grading plans; specifications; working drawings; details for construction of garden accessories. *I*; (2).

Mr. Root

*Prerequisite:* Civil Engineering 22, Horticulture 23b.

28. EXOTICS.—Tender decorative plants used in landscape gardening. *II*; (1).

Mr. Root

30. DECORATIVE AND BEDDING PLANTS.—Tropical and subtropical plants used in decorative work in the conservatory; tender plants used in out-door bedding; Lectures; practical greenhouse work. *II*; (5).

Assistant Professor DORNER, Mr. NEHRLING

*Prerequisite:* Horticulture 15a.

31. GARDEN FLOWERS.—The propagation and growing of annuals, herbaceous perennials, bulbs, and shrubs for cut flowers and ornamental plantings. *I*; (3).

Assistant Professor DORNER

*Prerequisite:* Horticulture 5; Botany I.

32. FLORAL DECORATION.—Cut flowers and plants in decorative work; arrangement of flowers in baskets, designs, and bouquets; table decoration; house decoration. (For floricultural students.) *II*; (3).

Assistant Professor DORNER

33. SYSTEMATIC POMOLOGY.—Description, nomenclature, and classification of native and sub-tropical fruits; critical descriptions

and identification with special reference to relationships and classifications of varieties; judging and displaying fruits. *I*; (2).

Mr. BAILEY

*Prerequisite:* Horticulture 8.

[34. VEGETABLES UNDER GLASS.—*I*; (3). Not given 1912-1913.

Professor LLOYD, Mr. DURST

*Prerequisite:* Horticulture 3, 15a.]

[35. PRIVATE CONSERVATORY WORK.—Types of plants for large conservatories; arrangement; care. *II*; (3). Not given in 1912-1913.

Assistant Professor DORNER, Mr. NEHRLING

*Prerequisite:* Horticulture 15a, 4.]

36. LANDSCAPE GARDENING LITERATURE.—Reference readings; the literature on landscape gardening. *II*; (2).

Mr. ROOT

#### COURSES FOR GRADUATES

At least two years of collegiate work in horticulture and allied subjects and the requisite preparation for the chosen topics are required for entrance upon major work in this department.

102. POMOLOGY.—Special problems in the adaption, propagation, cultivation, or pruning of small fruits.

Professor CRANDALL

103. OLERICULTURE.—Special problems in the structure, cultural requirements, and improvement of vegetables.

Professor LLOYD

108. POMOLOGY.—Special problems in the relationship, adaption, improvement, propagation, cultivation, pruning, protection, preservation, or marketing of orchard fruits.

Professor BLAIR, Professor CRANDALL

109. FORESTRY.—Problems in general forestry and investigation of forest growths.

115. FLORICULTURE.—The horticultural status of various flowering plants, or special problems in the culture of greenhouse plants.

Assistant Professor DORNER

#### HOUSEHOLD SCIENCE

ISABEL BEVIER, Ph.M., *Professor, Household Science*

NELLIE ESTHER GOLDTHWAITE, Ph.D., *Assistant Professor, Household Science*

CHARLOTTE MITCHELL GIBBS, A.M., *Associate, Textiles*

HELENA MAUD PINCOMB, B.S., *Associate, Household Science*

HARRIET BECKWITH RINAKER, M.A., *Instructor, Household Science*

NINA BELLE CRIGLER, B.S., *Instructor, Household Science*

CORA EMELINE GRAY, A.M., *Instructor, Household Science*  
RUTH WHEELER, A.B., *Instructor, Household Science*  
MAUDE PARSONS, B.S., *Instructor and Director of Lunch Room*  
GEORGIA FLEMING, B.S., *Assistant, Textiles*  
GRACE ESTHER STEVENS, A.B., *Assistant, Household Science*

## FOOD

1. PRINCIPLES OF THE SELECTION AND PREPARATION OF FOOD.—The nature and use of foods, their chemical composition, and the changes effected by heat, cold, or fermentation; the principles of selection, illustrated by marketing expeditions; processes of the manufacture of foods; combinations of different kinds. *II*; (3).

Miss CRIGLER, Miss RINAKER, Miss GRAY

*Prerequisites:* Entrance credit in physics; Chemistry 1.

6. ECONOMIC USES OF FOOD.—(Continuation of 1.) The economics of the food question; uses and applications of preservatives. *I*; (3).

Miss CRIGLER, Miss RINAKER, Miss GRAY

*Prerequisite:* Household Science 1.

14. SPECIAL PROBLEMS IN CONNECTION WITH THE SERVICE OF FOOD.—(Continuation of 6.) Problems of marketing, domestic storage, management of menus, and utilization of waste food materials as modified by special conditions. *II*; (3).

Miss GRAY

*Prerequisite:* Household Science 6.

5. DIETETICS.—The principles of diet; the relation of food to health; influence of age, sex, and occupation on diet; the construction of dietaries; dietetic treatment of certain diseases. Laboratory practice. *II*; (3).

Assistant Professor GOLDTHWAITE

*Prerequisite:* Household Science 1, 6; Physiology 4; Chemistry 1, 2, 3.

4. FOOD AND NUTRITION.—Application of the principles of pure science to the physiological, chemical, or bacteriological problems of food and nutrition. Individual investigation. *I*; (5).

Assistant Professor GOLDTHWAITE

*Prerequisite:* Botany 5; Chemistry 1, 2, 3, 13a, 9, 9c; five hours in botany or zoology; Household Science 1, 5, 6.

## THE HOUSE

2. HOME ARCHITECTURE AND SANITATION.—Situation, surroundings, and construction of the house; hygiene of the home; heating, lighting, ventilating, water supply, and drainage. Lectures on house

planning; exercise in making skeleton plans, and on sanitary plumbing and fixtures and internal drainage. I; (2).

Professor BEVIER, Professor MANN, Professor WHITE, Miss GIBBS, Miss PINCOMB, Mr. CLARK

3. ELEMENTARY HOME DECORATION.—(Continuation of 2.) Evolution of the house; homes of primitive peoples; theory of color and its application in home decoration; evolution of the home; furnishings from a sanitary and artistic standpoint. II; (2).

Professor BEVIER

*Prerequisite:* Art and Design 12, Household Science 2.

10. HOUSEHOLD MANAGEMENT.—Organization of the household; expenditure of income; care of the house and family; principles of home nursing; other essentials of a well-ordered home. (Open to juniors and seniors.) I; (2).

Miss GRAY

*Prerequisite:* Household Science 1, 2, 5, 6; Economics 1.

#### TEXTILES

7. TEXTILES.—Development of primitive industries; production of fibers used in textile manufacture; practice in judging cloth; application of the principles of selection of color and design in costumes. I; (2).

Miss GIBBS

12. HOUSEHOLD ART AND CLOTHING.—(Continuation of 7.) Materials suitable for various uses in home and in clothing; texture, quality, design in relation to form; color in relation to environment and personality; hygienic properties and cost. II; (3).

Miss GIBBS, Miss FLEMING

*Prerequisite:* Household Science 7; Art and Design 1, 12; 30 hours of university work.

17. PROBLEMS IN THE STUDY OF TEXTILES.—The quality of material; microscopic and chemical analysis of fabrics; movements related to the textile industry. Lectures; laboratory. II; (3).

Miss GIBBS

*Prerequisite:* Household Science 7, 12; Chemistry 1, 2, 3.

#### COURSES FOR TEACHERS

11. TEACHERS' COURSE.—The best method of presenting the work; its correlation with other subjects; practice in planning such courses, and some opportunity for presenting them. (For the prospective supervisor of the subject, or teacher in the graded schools. Open to seniors.) II; (3).

Professor BEVIER, Miss PINCOMB

*Prerequisite:* Household Science 1, 2, 3, 5, 6, 7, 12, 13; laboratory work in sewing, Saturday morning, first semester.

13. HISTORY OF HOME ECONOMICS.—Origin and development of home economics; the work in different types of institutions; the planning of courses for these types. Open to juniors and seniors.) *I*; (1). Professor BEVIER

9. SEMINAR.—Different phases of home economics; individual problems. *II*; (3). Professor BEVIER

*Prerequisite:* Senior standing.

#### ECONOMICS OF THE FAMILY

15. THE ECONOMICS OF THE FAMILY GROUP.—History and various forms of the family; its industrial organizations; money and other income; the laws of consumption; interplay of economic, physiological, and psychological motives in expenditure and consumption; reaction of the changing forms of modern industry on family industry; economic, social, and legal relations of the members of the family; economic position of woman in modern society; the domestic service problem; retail and wholesale market. *II*; (3).

Miss GRAY

*Prerequisite:* Household Science 3, 10, 12, 14; Economics 1.

16. PROBLEMS IN THE ECONOMICS OF THE FAMILY GROUP.—Individual work in the senior seminar in economics. *I, II*; (2-4).

Professor KINLEY

*Prerequisite:* Household Science 15.

#### COURSES FOR GRADUATES

Students who wish to do graduate work in Household Science will find it to their advantage to specialize in either the scientific or the economic phases of the subject. In either case they should be able to offer an equivalent for twenty hours of household science given in the University of Illinois, with a minimum of one and one-half years of chemistry, a year of biological science, and a year of either economics or sociology.

101. HOME ECONOMICS.—The industrial, educational, and sociological aspects of the origin and development of home economics.

Professor BEVIER

102. SPECIAL INVESTIGATION.—Problems in the application of the principles of bacteriology, chemistry, and physiology to the ordinary processes used in the preparation of food.

Professor BEVIER

#### ITALIAN

(See ROMANCE LANGUAGES AND LITERATURE.)

## JOURNALISM

(See RHETORIC 12, 15, 17, 19, under THE ENGLISH LANGUAGE AND LITERATURE.)

## LANDSCAPE GARDENING

(See HORTICULTURE.)

## LATIN

(See THE CLASSICS.)

## LAW

OLIVER ALBERT HARKER, A.M., LL.D., *Professor, Dean*

FREDERICK GREEN, A.M., LL.B., *Professor*

EDWARD HARRIS DECKER, LL.B., *Professor*

JOHN NORTON POMEROY, A.M., LL.B., *Professor*

CHESTER GARFIELD VERNIER, A.B., J.D., *Professor, Secretary*

WILLIAM GREEN HALE, B.S., LL.B., *Professor*

I MAURICE WORMSER, A.B., LL.B., *Assistant Professor*

1. CONTRACTS.—*Williston's Cases; selected Illinois cases.* (First year. Open to students in Literature and Arts, with six hours' credit.) *I; (5); II; (3).* Professor DECKER

2. TORTS.—*Ames & Smith's Cases.* (First year. Open to students in Literature and Arts, with credit.) *I, II; (3).* Professor HALE

3. REAL PROPERTY.—*Gray's Cases, Vols. I and II.* (First year. Open to students in Literature and Arts, with credit.) *II; (3).* Assistant Professor WORMSER

4. COMMON LAW PLEADING.—(First year. Open to students in Literature and Arts, with credit.) *II; (3).* Professor HARKER

4a. ILLINOIS PROCEDURE.—(Third year.) *I; (3).*

5. CRIMINAL LAW AND CRIMINAL PROCEDURE.—*Mikell's Cases.* (First year. Open to students in Literature and Arts, with credit.) *I; (4).* Professor GREEN

6. PERSONAL PROPERTY.—*Gray's Cases, Vol. I.* (First year. Open to students in Literature and Arts, with credit.) *I; (2).* Professor VERNIER

7. DOMESTIC RELATIONS.—*Woodruff's Cases on Domestic Relations (2nd ed.)* (First year.) *II; (2).* Professor VERNIER

8. EVIDENCE.—*Thayer's Cases.* (Second year.) *I; (3); II; (2).* Professor HALE

9. SALES.—*Williston's Cases* (2nd ed.) (Elective, second or third year.) II; (3). Professor HALE
10. REAL PROPERTY.—*Gray's Cases, Vols. II and III.* (Second year.) I; (4). Assistant Professor WORMSER
11. AGENCY.—*Wambaugh's Cases.* (Second year.) I; (3). Professor VERNIER
12. EQUITY.—*Ames' Cases.* (Second year.) I; (3); II; (2). Professor POMEROY
13. DAMAGES.—*Beale's Cases, (2nd ed.)* (Elective, second or third year.) I; (2). Professor DECKER
14. CARRIERS.—*Green's Cases.* (Elective, second or third year.) II; (3). Professor GREEN
15. BILLS AND NOTES.—*Huffcut's Cases (Colson's Ed.).* (Third year.) I; (3). Professor VERNIER
16. TRUSTS.—*Ames' Cases.* (Elective, third year.) II; (3). Professor VERNIER
17. PRIVATE CORPORATIONS.—*Canfield & Wormser's Cases.* (Third year.) I; (2); II; (2). Assistant Professor WORMSER
18. WILLS.—*Costigan's Cases.* (Second year.) II; (2). Professor POMEROY
19. PARTNERSHIP.—*Mechem's Cases (2nd ed.)* (Third year.) I; (2). Professor HALE
20. EQUITY PLEADING.—*Thompson's Cases on Equity Pleading; Selected Illinois Cases.* (Second year.) II; (2). Professor HARKER
21. SURETYSHIP.—*Ames' Cases.* (Third year.) II; (3). Professor DECKER
22. CONSTITUTIONAL LAW (a).—*McClain's Cases.* (Third year.) I; (3). Professor GREEN
23. MORTGAGES AND RECORDING ACTS.—*Wyman's Cases on Mortgages* and part of Vol. VI of *Gray's Cases on Property.* (Elective, third year.) II; (2). Professor POMEROY
24. MUNICIPAL CORPORATIONS.—*Beale's Cases on Municipal Corporations.* (Elective, third year.) I; (2). Professor POMEROY
25. BANKRUPTCY.—*Williston's Cases.* (Elective, third year.) II; (2). Professor DECKER
26. MOOT COURT.—(Second year.) I, II; (2). Professor HARKER
- [27. FUTURE INTERESTS IN PROPERTY.—*Gray's Cases, Vol. V.*

(Elective, second or third year. Not given in 1912-13, but in 1913-14 and in alternate years.) II; (2).]

[28. INSURANCE.—*Wambaugh's Cases*. (Elective, second or third year. Not given in 1912-13, but in 1913-14 and in alternate years.) II; (2). Professor GREEN]

29. CONVEYANCING.—*Gray's Cases on Property, Vol. III* and part of *Vol. VI (2nd ed.)* (Elective, second or third year. Given in 1912-13 and in alternate years.) I; (2).

30. PUBLIC INTERNATIONAL LAW.—*Lawrence's Principles and Scott's Cases*. (Elective, second or third year.) I; (3).

Professor GARNER

[31. CONFLICT OF LAWS.—*Beale's Shorter Selection of Cases on Conflict of Laws*. (Elective, third year.) Not given in 1912-13, but in 1913-14 and in alternate years. II; (2). Professor VERNIER]

32. QUASI-CONTRACTS.—*Woodruff's Cases*. (Elective, second or third year. Given in 1912-13 and in alternate years.) II; (2).

Professor VERNIER

33. CONSTITUTIONAL LAW (b).—*McClain's Cases*. II; (2).

Professor GREEN

34. PUBLIC SERVICE COMPANIES.—*Wyman's Cases (2nd ed.)* (Elective, second or third year.) II; (2). Professor GREEN

## LIBRARY SCIENCE

PHINEAS LAWRENCE WINDSOR, Ph.B., *Director*

FRANCES SIMPSON, M.L., B.L.S., *Assistant Director, Assistant Professor, Library Science*

FLORENCE RISING CURTIS, A.B., B.L.S., *Instructor, Library Economy*

ERNEST JAMES REECE, Ph.B., *Instructor, Library Economy*

ETHEL BOND, A.B., B.L.S., *Instructor, Library Economy*

EDNA LYMAN SCOTT, *Special Lecturer, Library work with children*

CATHERINE OAKS, A.B., B.L.S., *Reviser*

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FRANCIS KEESE WYNKOOP DRURY, A.M., B.L.S., *Lecturer, Order work*

PHILIP SANFORD GOULDING, A.B., *Lecturer, Cataloging*

JACOB HODNEFIELD, A.M., *Lecturer, Exchanges*

EMMA FELSENTHAL, Ph.B., B.L.S., *Lecturer, General Reference*

ALICE SARAH JOHNSON, B.L.S., *Lecturer, General Reference*

EMMA REED JUTTON, B.L.S., *Lecturer, Loan Department*

ADAH PATTON, B.L.S., *Lecturer, Cataloging*

MARGARET HUTCHINS, A.B., B.L.S., *Lecturer*



JOHN BOYNTON KAISER, A.B., B.L.S., *Lecturer*  
 OLA M WYETH, A.B., B.L.S., *Lecturer*  
 MARGARET LUCY KINGSBURY, A.B., *Lecturer*  
 JENNIE ADAH CRAIG, A.B., B.L.S., *Lecturer*  
 MARGARET HERDMAN, A.B., *Lecturer*  
 CHARLES EDWIN JANVRIN, Ph.B., B.L.S., *Lecturer*  
 WINIFRED FEHRENKAMP, B.L.S., *Lecturer*  
 ELEANOR G KARSTEN, Ph.B., *Lecturer*

2. REFERENCE WORK.—Methods of research; the use of reference books; practical work in the reference department of the University library. *I, II; (3).* Assistant Professor SIMPSON

3. SELECTION OF BOOKS.—Selection of books for libraries of different types; practice in writing book annotations for library catalogs and bulletins. *I, II; (2).* Miss FELSENTHAL

4. PRACTICE WORK.—Four hours a week of practical work in the various departments of the University library. To be taken with Library 2, 16, 17, 18, 19, 20, and 21. *I, II; (2).* Miss CURTIS

6. SUBJECT BIBLIOGRAPHY.—Selection of books in special subjects; treatment of the literature and bibliography of each. Lectures given by professors in the respective departments of the University. *I, II; (2).*

7. HISTORY OF LIBRARIES.—The foundation, development, and resources of the leading libraries of Europe and the United States. *II; (2).* Assistant Professor SIMPSON

8. ADVANCED REFERENCE.—Transactions of learned societies; special periodicals and government publications; indexes and other works of value to a large reference department. *I; (2).*

Assistant Professor SIMPSON

*Prerequisite:* Library 2.

9. BOOKMAKING.—History of the early forms of books; the invention and spread of printing; book illustration; book-binding. *II; (2).* Director WINDSOR

10. PRACTICE WORK.—Eight hours a week; a continuation of Library 4, supplemented by one month of work as a member of the staff of an assigned public library. *I, II; (4).* Miss CURTIS

12. GENERAL REFERENCE.—Classification and arrangement of books in the University library; the card catalogs; the more generally used reference books. (Intended for freshmen and sophomores in the University, rather than for students registered in Library School.) Repeated each semester. *I or II; (2).*

Assistant Professor SIMPSON, Miss FELSENTHAL, Miss JOHNSON

13. PUBLIC DOCUMENTS.—13a.—Production and acquisition of Federal documents; their treatment and use as reference books. 13b.—American state and municipal documents; publications of foreign governments. (Second semester elective to students who have completed 13a.) *I, II; (2).* Mr. REECE

15. SEMINAR IN LIBRARY ECONOMY.—Special problems; library economy publications; independent work. *I, II; (2).*

Mr. REECE and others

16. ORDER, ACCESSION, AND SHELF WORK.—Order department records and routine; book-buying; publishers and discounts; copy-right; serials and continuations; gifts; exchanges; duplicates; the accession book and its substitutes; the shelf list and its uses; the care of pamphlets, clippings, and maps. *I; (2).* Miss CURTIS

17. CLASSIFICATION.—Principles of book classification; the Dewey Decimal Classification; the Cutter Expansion Classification; book numbers. *I; (3).* Miss BOND

18. CATALOGING.—Dictionary cataloging; assignment of subject headings; classed cataloging; sixty hours of cataloging for the University library. *I; (3).* Miss BOND

19. TRADE BIBLIOGRAPHY.—Books and periodicals used as tools of the book trade of America, England, Germany, France, Italy, Spain, Holland, and the Scandinavian countries. *II; (1).*

Mr. REECE

20. LOAN DEPARTMENT.—Records connected with the loan of books; representative loan systems; rules, regulations, and practices. *II; (1).* Miss JUTTON

21. PRINTING, BINDING, AND INDEXING.—*Printing:* Printing for libraries; practice in preparing copy and in reading proof; visits to print shops. *Binding:* Materials and methods of book-binding; bindings suitable for library use; visits to binderies; practice in preparing books for the bindery and in making necessary records; practice in the repair of books. *Indexing:* Indexes; the form of citation; the choice and arrangements of headings; kind of type; practice in the indexing of books and magazines. *II; (2).*

Director WINDSOR, Miss CURTIS, Mrs. KARSTEN

22. LIBRARY EXTENSION.—Method; library associations; library schools; library commissions; township and county library systems; traveling libraries; home libraries; other agencies. *II; (3).*

Mr. REECE

23. **LIBRARY ADMINISTRATION AND CURRENT LIBRARY LITERATURE.**—Current library periodicals, bulletins, reports, catalogs, and reading lists; the organization, reorganization, and administration of small libraries; the planning and equipment of reading rooms and small library buildings; library accounts and business forms. *I, II; (1).*

Miss CURTIS

24. **SELECTION OF BOOKS.**—English translations of representative works of French, German, Spanish, and Italian novelists of the 19th century; examination of about forty newly published books sent each month to the School for inspection. *I, II; (2).*

Assistant Librarian DRURY

25. **ADVANCED CLASSIFICATION AND CATALOGING.**—The principal systems of book classification; rules for cataloging books. *II; (1).*

Miss BOND

*Prerequisite:* Library 17, 18.

26. **LIBRARY ADMINISTRATION.**—Advanced order work; library organization; library architecture; library work with children; lectures on special topics by visiting librarians, members of the faculty, and the library staff. *I, II; (3).*

Miss CURTIS, Assistant Librarian DRURY, Mrs. SCOTT, Mr. REECE, and others

27. **BIBLIOGRAPHICAL INSTITUTIONS.**—Organization and work of societies and institutions of America and Europe interested in the production of bibliographical material; coöperative undertakings; international bibliography. *I; (1).*

Miss PATTON

28. **PRACTICE WORK.**—(Students may elect special practice work in certain departments of the University library.) *II; (1 to 4.)*

Director WINDSOR

## MATHEMATICS

EDGAR JEROME TOWNSEND, Ph.D., *Professor*

SAMUEL WALKER SHATTUCK, C.E., LL.D., *Professor, Emeritus*

GEORGE ABRAM MILLER, Ph.D., *Professor*

HENRY LEWIS RIETZ, Ph.D., *Associate Professor*

CHARLES HIRSCHEL SISAM, Ph.D., *Assistant Professor*

JAMES BYRNIE SHAW, D.Sc., *Assistant Professor*

ARNOLD EMCH, Ph.D., *Assistant Professor*

ARTHUR ROBERT CRATHORNE, Ph.D., *Associate*

ROBERT LACY BÖRGER, Ph.D., *Associate*

ERNEST BARNES LYTTLE, Ph.D., *Associate*

ELLIS BAGLEY STOUFFER, Ph.D., *Instructor*

AUBREY JOHN KEMPNER, Ph.D., *Instructor*  
 WILLIAM WELLS DENTON, Ph.D., *Instructor*  
 EDWARD WILSON CHITTENDEN, Ph.D., *Instructor*  
 ROY MARTIN WINGER, Ph.D., *Instructor*  
 GEORGE ERNEST CARSCALLEN, A.M., *Assistant*  
 WARD HASTINGS TAYLOR, A.B., *Assistant*  
 SIDNEY ARCHIE ROWLAND, JR., A.B., *Assistant*  
 ARTHUR KIERNAN, Ph.B., *Assistant*  
 CLARENCE MARK HEBBERT, B.S., *Assistant*  
 GEORGE RUTLEDGE, A.B., *Research Assistant*

The courses offered by the department are arranged to meet the needs of three classes of students: (1) those who wish to elect the subject as an element in a general education; (2) those who will have occasion to make use of mathematics in cognate subjects, and (3) those who wish to specialize in mathematics. Those who select mathematics as a major subject should take Mathematics 2, 4, and 6 in the freshman year; Mathematics 7, 9, and 18a in the sophomore year, and Mathematics 10, 16, 17a, and 19a in the junior year. In the senior year the selection may be made from the courses open to graduates and undergraduates as seems desirable. Students specializing in mathematics are advised to take work also in some line of applied mathematics.

The mathematical library, consisting of about 2,500 volumes, is adequate for advanced work and research. The leading mathematical journals are received currently. The department also has in its possession a collection of models and computing machines, which are valuable in instruction and research.

#### INTRODUCTORY COURSES FOR UNDERGRADUATES

2. COLLEGE ALGEBRA.—I; (3). (Three sections repeat the work in the second semester.)

Professor MILLER, Associate Professor RIETZ, Assistant Professor SISAM, Assistant Professor SHAW, Assistant Professor EMCH, Dr. CRATHORNE, Dr. BÖRGER, Dr. LYTLE, Dr. STOUFFER, Dr. KEMPNER, Dr. DENTON, Dr. CHITTENDEN, Dr. WINGER, Mr. CARSCALLEN, Mr. TAYLOR, Mr. ROWLAND, Mr. KIERNAN, Mr. HEBBERT

*Prerequisite:* Entrance algebra, 1½ units; plane geometry.

3a. SPHERICAL TRIGONOMETRY.—II; (2). Dr. CRATHORNE

*Prerequisite:* Solid and spherical geometry.

4. PLANE TRIGONOMETRY.—I; (2). Three sections repeat the work in the second semester.)

Professor MILLER, Associate Professor RIETZ, Assistant Professor SISAM, Assistant Professor SHAW, Assistant Professor EMCH, Dr. CRATHORNE, Dr. BÖRGER, Dr. LYTLE, Dr. STOUFFER, Dr. KEMPNER, Dr. DENTON, Dr. CHITTENDEN, Dr. WINGER, Mr. CARSCALLEN, Mr. TAYLOR, Mr. ROWLAND, Mr. KIERNAN, Mr. HEBBERT

*Prerequisite:* Entrance algebra,  $1\frac{1}{2}$  units; plane geometry.

5. TEACHERS' COURSE.—Secondary algebra and geometry; their educational values; position in course; methods of teaching; correlation; comparison of American methods with those of foreign countries; order of topics; most important topics; text-books; literature. Lectures; discussions; reports. II; (2). Dr. LYTLE

*Prerequisite:* Junior standing.

6. ANALYTIC GEOMETRY.—Plane and solid analytic geometry. II; (5).

Professor MILLER, Associate Professor RIETZ, Assistant Professor SISAM, Assistant Professor SHAW, Assistant Professor EMCH, Dr. CRATHORNE, Dr. BÖRGER, Dr. LYTLE, Dr. STOUFFER, Dr. KEMPNER, Dr. DENTON, Dr. CHITTENDEN, Dr. WINGER, Mr. CARSCALLEN, Mr. TAYLOR, Mr. ROWLAND, Mr. KIERNAN, Mr. HEBBERT

*Prerequisite:* Mathematics 2, 4.

7, 9. DIFFERENTIAL AND INTEGRAL CALCULUS.—The principles of the differential and integral calculus developed and applied to functions of one and of several variables. (Section A is an honor section and may be selected by those specializing in mathematics or having an average grade of 90 in freshman mathematics.) I; (5); II; (3).

Associate Professor RIETZ, Assistant Professor SISAM, Assistant Professor SHAW, Assistant Professor EMCH, Dr. CRATHORNE, Dr. BÖRGER, Dr. LYTLE, Dr. STOUFFER, Dr. KEMPNER, Dr. DENTON, Dr. CHITTENDEN, Dr. WINGER, Mr. CARSCALLEN

*Prerequisite:* Mathematics 6.

9a. DIFFERENTIAL AND INTEGRAL CALCULUS.—(Second Course.) The definite (single and multiple) integral with exercises in the formulation of problems arising in applied mathematics; line, surface, and volume integrals; the theorems of Stokes and Green; partial differentiation; exact differentials with applications of the condi-

tions for exactness; elements of differential questions; approximate quadrature and integration of differential equations. *I or II*; (2).

Assistant Professor EMCH, Dr. CRATHORNE, Dr. BÖRGER, Dr. STOUFFER

*Prerequisite:* Mathematics 7, 9.

8a. DIFFERENTIAL AND INTEGRAL CALCULUS.—(For students in chemistry and chemical engineering.) *I*; (5).

Professor MILLER, Dr. DENTON

*Prerequisite:* Mathematics 6.

18a. CONSTRUCTIVE GEOMETRY.—Development and training of space perception; properties of lines, planes, and the simpler surfaces of the second order studied by various methods of parallel and central projection; graphical interpretation of the processes of analytic geometry; analytic discussion of the methods of descriptive geometry. *II*; (3).

Assistant Professor EMCH

*Prerequisite:* Mathematics 6.

#### COURSES FOR GRADUATES AND ADVANCED UNDERGRADUATES

10. THEORY OF EQUATIONS AND DETERMINANTS.—Some of the fundamental properties of an algebraic equation in one unknown; the solutions of systems of simultaneous equations; theory of a system of linear equations; some fundamental properties of determinants. *II*; (3).

Professor MILLER

*Prerequisite:* Mathematics 6.

16. DIFFERENTIAL EQUATIONS.—General linear equations with constant coefficients; special forms of differential equations of higher order; integration in series. *I*; (3).

Dr. CRATHORNE, Dr. STOUFFER

*Prerequisite:* Mathematics 8a or 9.

17a. ADVANCED CALCULUS.—Fundamental notions and theorems of the calculus from a more advanced and critical point of view; elliptic integrals; functions defined by definite integrals. *II*; (3).

Dr. LYTLE

*Prerequisite:* Mathematics 7, 9.

19a. SOLID ANALYTIC GEOMETRY.—Equations of the plane and the right line in space; the more general properties of surfaces of the second degree; the classification and special properties of quadrics; a brief introduction to the theory of surfaces in general. *II*; (3).

Assistant Professor SISAM

*Prerequisite:* Mathematics 8a (or 7), 10.

20. CALCULUS OF VARIATIONS.—Those elements of the science

that are most needed in the study of the higher subjects of mathematical astronomy and physics. *II*; (3). Dr. CRATHORNE

*Prerequisite:* Mathematics 16.

[21a. METHOD OF LEAST SQUARES.—Law of probability and error; adjustment of observation; precision of observation; independent and conditional observations. *I*; (2). Not given in 1912-13; given in 1913-14. Assistant Professor STEBBINS

*Prerequisite:* Mathematics 8a or 7.]

22a. PARTIAL DIFFERENTIAL EQUATIONS.—Integration and determination of the integration constants of such partial differential equations as arise in the study of such subjects as the flow of heat, the vibration of strings, plates, and electricity. *II*; (2).

Dr. CRATHORNE

*Prerequisite:* Mathematics 16.

23a. AVERAGES AND THE MATHEMATICS OF INVESTMENT.—Meaning, use, and abuse of different kinds of averages; relation of the theory of probability to averages; application of the elements of probability to annuities, insurance, and various branches of science; loans and investments; practical problems in the evaluation of investment securities. *II*; (3). Associate Professor RIETZ

*Prerequisite:* Mathematics 2; junior standing.

24a. FUNCTIONS OF A COMPLEX VARIABLE.—*I, II*; (3).

Professor TOWNSEND

*Prerequisite:* Mathematics 7, 9, 16.

[27. PROJECTIVE GEOMETRY.—Fundamental concepts; anharmonic ratio; projective pencils and ranges; projective transformations and groups; theory of conics and quadric surfaces; pencils and ranges of conics; quadratic transformations and projective theory of cubics; applications in mechanics. *I, II*; (3) Not given in 1912-13; given in 1913-14. Assistant Professor EMCH

*Prerequisite:* Senior standing in mathematics.]

31. ACTUARIAL THEORY.—Application of probability to life contingencies; mortality tables; fire insurance; premiums for various types of insurance. *I*; (3). Associate Professor RIETZ

*Prerequisite:* Mathematics 8a, 23a.

32. HISTORY OF MATHEMATICS.—Historical development of the elementary subjects; rise and growth of the higher mathematics chiefly in the nineteenth century; biography of the persons most influential in this development. Lectures; reports on assigned reading. *II*; (2).

Dr. LYTLE

33. MODERN ALGEBRA.—Theory of matrices; system of linear equations; bilinear and quadratic forms; properties of polynomials; algebraic invariants; elementary divisors. *I, II; (3).*

Dr. BÖRGER

*Prerequisite:* Mathematics 9, 10.

#### COURSES FOR GRADUATES

100. SEMINAR AND THESIS—*Three times a week; I, II.*

Professor TOWNSEND, Professor MILLER, Associate Professor RIETZ, Assistant Professor SISAM, Assistant Professor SHAW, Assistant Professor EMCH

[101. FUNCTIONS OF REAL VARIABLES.—The theory of functions of real variables; the theory of assemblages. *Three times a week; I, II.* Not given in 1912-1913; given in 1913-1914. Dr. CRATHORNE  
*Prerequisite:* Mathematics 16.]

102. FOURIER SERIES.—*Three times a week; I, II.*

Assistant Professor SHAW

*Prerequisite:* Mathematics 16 or 17a.

103. THEORY OF THE POTENTIAL.—Newtonian, logarithmic, and other potential functions; spherical harmonics; Green's theorem and functions; existence and boundary theorems; functions defined by other related partial differential equations of physics; applications to Electrodynamics. (For students of pure mathematics and of the physical sciences.) *Three times a week; I, II.*

Assistant Professor SHAW

*Prerequisite:* Mathematics 16 or 17a.

110. ELLIPTIC FUNCTIONS.—Elliptic functions applied to geometry and mechanics; the elliptic modular functions. *Three times a week; I, II.*

Assistant Professor EMCH

*Prerequisite:* Mathematics 24a.

111. AUTOMORPHIC FUNCTIONS.—*First semester:* The group-theoretic side of the theory. *Second semester:* Function-theoretic developments and applications. *Three times a week; I, II.*

*Prerequisite:* Mathematics 24a and preferably 27 and 110.

112. ABELIAN FUNCTIONS.—Algebraic functions of a complex variable and their integrals; Riemann's surfaces; birational transformations; Abel's theorem with geometric applications; the inversion problem and the theta functions. *Three times a week; I, II.*

*Prerequisite:* Mathematics 24a, 110.



113. THEORY OF LINEAR DIFFERENTIAL EQUATIONS.—*Three times a week; I, II.* Dr. CRATHORNE

*Prerequisite:* Mathematics 24a.

120. ELEMENTARY THEORY OF GROUPS.—Groups in arithmetic, geometry, and trigonometry; those which can be represented with a small number of letters; the abstract group theory; the Galois theory of equations. *Three times a week; I, II.* Professor MILLER

121. THEORY OF GROUPS.—*Three times a week; I, II.*

Professor MILLER

*Prerequisite:* Mathematics 120.

[124. THEORY OF NUMBERS.—Congruences; Kronecker's modular systems; quadratic residues; quadratic forms; algebraic numbers. *Three times a week; I, II.* Not given in 1912-13; given in 1913-14. Professor MILLER]

129. THEORY OF STATISTICS.—General methods of statistical investigation; application of the theory of probability to statistical data; fitting curves to observation; interpolation; theory of errors; mathematical theory of variability and correlation; application of principles developed to problems in economics, sociology, and biology. *Three times a week; I, II.* Associate Professor RIETZ

*Prerequisite:* Mathematics 8a.

[130. INVARIANTS AND HIGHER PLANE CURVES.—General theory of algebraic curves; application of the theory of invariants to higher plane curves; curves of the third and fourth order. *Three times a week; I, II.* Not given in 1912-13; given in 1913-14: Dr. BÖRGER

*Prerequisite:* Mathematics 16, 27.]

[131. ALGEBRAIC SURFACES.—Application of homogeneous co-ordinates and the theory of invariants to geometry of three dimensions; general theory of surfaces; special properties of surfaces of the third and fourth order. *Three times a week; I, II.* Not given in 1912-13. Assistant Professor SISAM

*Prerequisite:* Mathematics 19a, 130.]

135. METRIC DIFFERENTIAL GEOMETRY.—Applications of the calculus to the general theory of curves and surfaces based primarily on the use of Cartesian co-ordinates; relation of the theory of surfaces to the theory of invariants of a pair of quadratic differential forms. *Three times a week; I, II.* Assistant Professor SISAM

*Prerequisite:* Mathematics 16.

[140. THE FUNDAMENTAL CONCEPTS OF MATHEMATICS.—The general concepts of higher mathematics in their bearing on elementary

mathematics. *Three times a week; I.* Not given in 1912-13; given in 1913-14. Dr. LYTLE

*Prerequisite:* Senior standing in mathematics.]

[141. VECTOR METHODS.—*Three times a week; I, II.* Not given in 1912-13; given in 1913-14. Assistant Professor SHAW

*Prerequisite:* Mathematics 16 or 17a.]

## MECHANICAL ENGINEERING

CHARLES RUSS RICHARDS, M.M.E., *Professor*

GEORGE ALFRED GOODENOUGH, M.E., *Professor, Thermodynamics*

BRUCE WILLET BENEDICT, B.S., *Director, Shop Laboratories*

OSCAR ADOLPH LEUTWILER, M.E., *Assistant Professor, Machine Design*

JOHN ADLUM DENT, M.E., *Instructor*

\*ARCHIE STANTON BUYERS, B.S., *Instructor*

BRAINERD MITCHELL, JR., M.E., *Instructor, Machine Design*

HARRY FREDERICK GODEKE, B.S., *Instructor*

HERBERT SETON EAMES, B.S., *Instructor*

DAVID LEONARD SCROGGIN, *Instructor, Machine Shop*

FREDERICK ELLIS, *Instructor, Wood Shop*

EDGAR THOMAS LANHAM, *Instructor, Forge Shop*

ROBERT EDWIN KENNEDY, *Instructor, Foundry*

JOHN NICHOLAS VEDDER, A.M., *Assistant*

ALONZO PLUMSTED KRATZ, M.S., *Assistant*

EDWIN BRENTON FLANIGAN, C.E., *Assistant*

JAMES MERION DUNCAN, *Assistant, Wood Shop*

GUSTAV H RADEBAUGH, *Assistant, Machine Shop*

PETER JOSEPH REEBMAN, *Assistant, Forge Shop*

JOSEPH CULPEPPER PENDLETON, *Assistant, Foundry*

JOHN ALEXANDER FRISK, *Assistant and Mechanician*

3. POWER MEASUREMENT.—The apparatus used in engine and boiler tests—scales, thermometers, indicators, brakes and dynamometers, gauges, calorimeters; methods of calibrating and using such apparatus; tests for horse-power of steam engines, pumps, and gas engines. Reports. *I; (2).*

Mr. GODEKE, Mr. EAMES, Mr. KRATZ, Mr. FLANIGAN

*Prerequisite:* Mechanical Engineering 16, Mathematics 9.

4. ELEMENTS OF MACHINE DESIGN.—Design of machine ele-

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\*Resigned, Dec. 31, 1912.

ments: Bolts, keys, journals, bearings, couplings; forms of gear teeth; spur and bevel gears. *I*; (2). Mr. MITCHELL

*Prerequisite:* General Engineering Drawing 1, 2.

5. MECHANISM (Kinematics of Machinery).—Typical mechanisms and mechanical movements; kinematic principles involved in laying out such mechanisms; the methods of Reuleaux; parallel motions; quick return motions; valve gears; epicyclic trains. *I*; (3).

Mr. DENT, Mr. BUYERS

*Prerequisite:* Physics 1, 3; Theoretical and Applied Mechanics 7.

6. HEAT ENGINES.—The steam engine; steam turbine; gas engine; air compressor; refrigerating machine. Mixtures of gases; combustion of gaseous fuels. (A continuation of course 7.) *I*, *II*; (2).

Professor RICHARDS, Professor GOODENOUGH

*Prerequisite:* Mechanical Engineering 7.

7. THERMODYNAMICS.—The transformation of heat into work; the second law and its connection with irreversible processes; the properties of heat media, the perfect gases, saturated and superheated vapors; the flow of fluids. *II*; (3).

Professor GOODENOUGH, Mr. DENT

*Prerequisite:* Mathematics 9a; Theoretical and Applied Mechanics 8.

8. MECHANICS OF MACHINERY.—Friction in machine parts; useful application of friction as in friction clutches and brakes; transmission of power by ropes and belting; brakes, clutches, and dynamometers; hoisting machinery; hoisting in mines; elevators and cranes; hydraulic machinery; accumulators, and centrifugal pumps; fans, blowers, air compressors, air motors and transmission of power by means of air. *I*; (3).

Assistant Professor LEUTWILER

*Prerequisite:* Theoretical and Applied Mechanics 9, 11; Mechanical Engineering 5, 7.

9. MACHINE DESIGN.—Theory of machine design, with applications; investigation of actual machine similar to the one to be designed; design of machinery subjected to heavy and variable stresses: Punches, shears, presses, riveters, and cranes. *I*, *II*; (3).

Assistant Professor LEUTWILER, Mr. BUYERS

*Prerequisite:* Theoretical and Applied Mechanics 8, 9; Mechanical Engineering 4, 5.

11. STEAM ENGINES AND BOILERS.—The construction, operation, and care of boilers and engines; elementary thermodynamics; the

indicator and indicator diagrams; steam engine performance. (For students in civil, architectural, and municipal engineering.) *II*; (3).

Mr. DENT, Mr. MITCHELL

*Prerequisite:* Physics 1.

12. MECHANICAL ENGINEERING LABORATORY.—Experiments on engines, turbines, gas engines, pumps, boilers, injectors, air compressors, hoisting appliances, heating apparatus, and the refrigerating machines. Tests of power plants in the vicinity. *I*; (3).

Mr. GODEKE, Mr. KRATZ, Mr. EAMES, Mr. FLANIGAN

*Prerequisite:* Mechanical Engineering 3, 7.

13. MECHANICAL ENGINEERING LABORATORY.—The testing and calibration of instruments and apparatus; use of the indicator; calculation of horse-power and steam consumption; reading of indicator diagrams; valve setting. (For students in electrical engineering.) *II*; (3). Mr. GODEKE, Mr. KRATZ, Mr. EAMES, Mr. FLANIGAN

14. DESIGN OF POWER PLANTS.—Design, with estimates and specifications, of some form of power plant. *II*; (3).

Assistant Professor LEUTWILER, Mr. KRATZ

*Prerequisite:* Mechanical Engineering 12.

15. THERMODYNAMICS AND HEAT ENGINES.—A synopsis of courses 6 and 7, for students in electrical engineering. *I, II*; (3).

Professor GOODENOUGH, Mr. DENT, Mr. EAMES

*Prerequisite:* Mechanical Engineering 11 or 16 or 23.

16. STEAM ENGINEERING.—Engines, boilers, pumps, condensers, and other steam machinery. *II*; (3). Mr. GODEKE, Mr. EAMES

*Prerequisite:* Physics 1, 3.

19. SEMINAR.—Papers on subjects relating to current engineering practice; the indexing of current engineering literature. Each student subscribes for a technical journal. Open to seniors only. *I, II*; (1). Professor RICHARDS

23. STEAM ENGINEERING.—A synopsis of courses 11 and 16, for students in electrical engineering. *I*; (2).

Professor GOODENOUGH, Mr. DENT, Mr. EAMES

24. MACHINE DESIGN AND MECHANISM.—The design of simple machine elements: keys, couplings, gears; the principles of mechanism. (For students in electrical engineering.) *I*; (3).

Mr. BUYERS, Mr. MITCHELL

*Prerequisite:* General Engineering Drawing 1, 2.

27. ADVANCED LABORATORY PRACTICE.—Special research work in

the mechanical engineering laboratory. Open to seniors only. *Time and credits will be arranged by consultation.* Mr. KRATZ

*Prerequisite:* Mechanical Engineering 12.

29. SEMINAR FOR JUNIORS.—Technical publications; the presentation of abstracts of important articles on engineering topics. Methods of classification; filing systems for clippings, catalogs, and drawings. II; (1). Professor RICHARDS

*Prerequisite:* Rhetoric I.

31. TRANSMISSION OF POWER.—The transmission of power by shafting, belts, ropes, cables, water, compressed air, steam, and gas. I; (2). Professor RICHARDS

*Prerequisite:* Mechanical Engineering 7, 8.

32. MECHANICAL ENGINEERING LABORATORY.—Heating and ventilation. Calibration of instruments, tests of various heating systems, experiments on fans and blowers. I; (1).

Mr. GODEKE, Mr. KRATZ, Mr. FLANIGAN

33. THESIS.—Investigation of special subject and preparation of thesis embodying a review of the literature of the subject, the results of investigation, and a discussion of those results. Weekly reports during the second semester. (Required of seniors.) II; (3).

Professor RICHARDS, Professor GOODENOUGH, Director BENEDICT,  
Assistant Professor LEUTWILER

35. MINE MACHINERY.—Air compressors, pumps, gas engines, and other machinery used in mining. (For students in mining engineering.) I; (2). Mr. DENT

41. SHOP PRACTICE.

*Pattern Work* (18 weeks).—Exercises in elementary wood work; wood turning; pattern making. Blue prints and practice in reading drawings.

*Forge Work* (9 weeks).—Methods of handling iron and steel in the forge fire; forging, welding, and the working of iron and steel under the power hammer; heat treatment of steel, including the handling of the modern high speed steels.

*Foundry Work* (9 weeks).—Molding and core work; melting and casting iron and brass; molding machines and other labor-saving devices; the mixing of iron; the operation of the cupola; the mixing and melting of brass and other soft metals. I, II; (3).

Director BENEDICT, Mr. ELLIS, Mr. LANHAM, Mr. KENNEDY,  
Mr. DUNCAN, Mr. REBMAN, Mr. PENDLETON

42. MACHINE SHOP PRACTICE.—Elementary exercises in chipping, filing; practice on the drill, lathe, planer, and other standard machine tools; methods of manufacture; cost-keeping systems; visits of inspection. *I*; (3), *II*; (2).

Director BENEDICT, Mr. SCROGGIN, Mr. RADEBAUGH

46. ADVANCED SHOP PRACTICE.—The construction of commercial machinery, of apparatus or machines originally designed by the student, or a study of modern shop processes, especially those relating to the production of interchangeable parts by means of jigs and templates. Elective for juniors or seniors. *I* or *II*. *Time and credits will be arranged.* Director BENEDICT, Mr. SCROGGIN

*Prerequisite:* Mechanical Engineering 41, 42.

47. SHOP PRACTICE FOR SPECIAL STUDENTS.—Open only to special students. No credit. Mr. SCROGGIN

48. FORGE SHOP PRACTICE.—Forging for the practical farmer. For students in agriculture. *Six hours a week, either half of I or II*; (2). Mr. LANHAM, Mr. REBMAN

49. WOOD SHOP PRACTICE.—For students in agriculture. *Nine hours a week, to be arranged. I* or *II*; (3). Mr. ELLIS, Mr. DUNCAN

#### COURSES FOR GRADUATES

Entrance upon graduate work in mechanical engineering presupposes the full undergraduate course in that subject.

106. HEAT MOTORS.—The advanced theory of the internal combustion motor, and of the steam turbine. The general principles and methods of refrigeration. *Twice a week; II.*

Professor GOODENOUGH

107. THERMODYNAMICS.—The general principles of thermodynamics and their application to the solution of physical and engineering problems. *Twice a week; I.* Professor GOODENOUGH

*Prerequisites* Mechanical Engineering 7 or an equivalent

109. MACHINE DESIGN.—The general principles of rational design; the application of mechanics of materials. Individual problems. *Twice a week; I* or *II.* Assistant Professor LEUTWILER

112. LABORATORY INVESTIGATION.—Special investigations of problems relating to combustion of fuel; boiler economy; steam engines and turbines; gas engines and producers; properties of explosive mixtures; mechanical refrigeration. Original work. *Three times a week; I* or *II.* Professor RICHARDS and assistants

114. DYNAMICS OF MACHINERY.—Advanced problems. Balancing; whirling and vibration of shafts; theory of governors; fly wheels;

force and mass reduction; stresses in rotating masses. *Twice a week; I, II.* Professor GOODENOUGH

# MECHANICS, THEORETICAL AND APPLIED

ARTHUR NEWELL TALBOT, C.E., *Professor, Municipal and Sanitary Engineering; in charge of Theoretical and Applied Mechanics*

HERBERT FISHER MOORE, M.M.E., *Assistant Professor*

MELVIN LORENIUS ENGER, C.E., *Assistant Professor*

VIRGIL R FLEMING, B.S., *Associate*

CLARENCE EUGENE NOERENBERG, A.B., A.E., *Instructor*

FRED B SEELY, B.S., *Instructor*

GEORGE PAUL BOOMSLITER, B.S., *Instructor*

HARRISON FREDERICK GONNERMAN, B.S., *Instructor*

NEWTON EDWARD ENSIGN, A.B., B.S., *Instructor*

STANLEY PRINCE FARWELL, M.S., *Instructor*

FLOYD HAYS MILLARD, M.S., *Instructor*

6. ENGINEERING MATERIALS.—The properties and requirements for materials used in engineering construction, the effect of methods of manufacture upon the quality of the material, and the specifications and standard tests used to secure acceptable grades of material. Lectures and assigned reading. *I; (1).*

PROFESSOR TALBOT, Assistant Professor MOORE

*Prerequisite:* Registration in Theoretical and Applied Mechanics 9.

7, 8. ANALYTICAL MECHANICS.—The mechanics of engineering rather than that of astronomy and physics: Fundamental concepts; equilibrium and motion; engineering problems; statement of conditions and use of data. (The work begins in the second semester; in the first semester of the following year it is given concurrently with Theoretical and Applied Mechanics 9.) *Maurer's Technical Mechanics. II; (3); I; (2½).*

Assistant Professor ENGER, Mr. NOERENBERG, Mr. BOOMSLITER, Mr. SEELY, Mr. ENSIGN, Mr. FARWELL, Mr. MILLARD

*Prerequisite:* For 7, Mathematics 7, registration in Mathematics 9; for 8, Mathematics 9; Theoretical and Applied Mechanics 7.

9. RESISTANCE OF MATERIALS.—The mechanics of materials; experiments and investigations in the materials laboratory; problems in ordinary engineering practice; the quality and requirements for structural materials. *Merriman's Mechanics of Materials. Laboratory weekly. I; (3½).*

Assistant Professor ENGER, Mr. FLEMING, Mr. NOERENBERG,  
Mr. BOOMSLITER, Mr. SEELY, Mr. ENSIGN, Mr. GONNERMAN,  
Mr. FARWELL, Mr. MILLARD

*Prerequisite:* Mathematics 9; Theoretical and Applied Mechanics 7; registration in Theoretical and Applied Mechanics 8.

10. HYDRAULICS.—The pressure and the flow of water and its utilization as motive power; observation and measurement of pressure, velocity, and flow; power and efficiency; determination of experimental coefficients. Hoskins' *Hydraulics. Laboratory weekly; II; (3).*

Assistant Professor ENGER, Mr. FLEMING, Mr. SEELY, Mr. GONNERMAN, Mr. FARWELL

*Prerequisite:* Mathematics 9; Theoretical and Applied Mechanics 8.

11. ANALYTICAL MECHANICS.—Advanced kinetics; problems and applications. (An extension of Theoretical and Applied Mechanics 7 and 8, for mechanical engineers.) *II; (3).* Mr. SEELY

*Prerequisite:* Mathematics 9; Theoretical and Applied Mechanics 8.

14. ELEMENTS OF MECHANICS.—Kinematics, kinetics, and statics. (For architects and others who have not taken the calculus.) Morley's *Mechanics for Engineers. II; (4).*

Mr. NOERENBERG, Mr. BOOMSLITER, Mr. MILLARD

*Prerequisite:* Mathematics 2, 4.

15, 16. STRENGTH OF MATERIALS.—Graphical methods of determining the elastic curve of beams; centroids and moments of inertia of areas; reinforced concrete beams and columns; properties and tests of engineering materials. (For students in architecture and others without the prerequisites required for Theoretical and Applied Mechanics 9.) Murdock's *Strength of Materials. Laboratory every other week I, II; (3).*

Mr. NOERENBERG, Mr. BOOMSLITER, Mr. MILLARD, Mr. FLEMING

*Prerequisite:* Theoretical and Applied Mechanics 14.

#### COURSES FOR GRADUATES

Entrance upon graduate work in theoretical and applied mechanics presupposes a full undergraduate course in that subject.

101. ANALYTICAL MECHANICS.—Methods of treatment and attack; the more complex problems and applications; critical and comparative study of texts. *Twice a week; I.*

Assistant Professor MOORE



102. RESISTANCE OF MATERIALS.—Properties of materials used in engineering construction and the methods of determining these properties; analysis and investigation in mechanics of materials; the effect of form of member in a structure or machine; the method of application of forces; comparative study of texts. *Twice a week; II.* Assistant Professor MOORE

103. HYDRAULICS AND HYDRAULIC ENGINEERING.—The laws of hydraulics and their application to engineering problems; hydraulic power and its development; design and investigation. *Twice a week; II.* Professor TALBOT

104. EXPERIMENTAL WORK IN THE LABORATORY OF APPLIED MECHANICS.—Investigation in the materials testing laboratory on materials and on their action as used in machines and structures; experiments in the hydraulic laboratory with pumps, motors, and measuring devices, and the investigation of the laws of hydraulics, the development of power, and the study of various hydraulic problems. *I, II.* Professor TALBOT, Assistant Professor MOORE

105. EXPERIMENTAL AND ANALYTICAL WORK IN REINFORCED CONCRETE.—Research: interpretation of available experimental results and their application to the design of structures; principles of construction; typical reinforced concrete structures. *Twice a week. I, II.* Professor TALBOT

## METEOROLOGY (See under GEOLOGY.)

## MILITARY SCIENCE

BENJAMIN CLARKE MORSE, Major of Infantry, U. S. Army, *Professor and Commandant*

EUGENE HENDRICKS LESLIE, *Assistant*

HOWARD CHRISTOPHER HOHMAN, *Assistant*

HARWELL CLOUD THOMPSON, *Assistant*

CHARLES RUSH HORRELL, *Assistant*

LEWIS BROWN ERMELING, *Assistant*

\*I. THEORETICAL INSTRUCTION.—Infantry Drill Regulations. For all male students. *II; (1).*

Mr. LESLIE, Mr. HOHMAN, Mr. THOMPSON, Mr. HORRELL, Mr. ERMELING

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\* Freshmen and sophomores are required to drill one and one-half hours each week until March 15; after that date, three hours each week. Freshmen attend recitations one hour a week in the second semester. Assignments to classes and companies are made by the Commandant of Cadets according to circumstances.

\*2. PRACTICAL INSTRUCTION.—*Infantry*.—School of the soldier; company and battalion; regimental ceremonies. *Artillery*.—School of the cannoneer and battery dismounted. Freshman and sophomore years. *I, II; (1)*. Professor MORSE

3. THEORETICAL INSTRUCTION.—For sophomores: Drill Regulations and military administration. For juniors: Field Service Regulations. For seniors: Field Engineering. This course is obligatory upon commissioned officers and sergeants, recommended to corporals, and open to others. *I, II*. Professor MORSE

AUTHORIZED TEXT-BOOKS—*United States Drill Regulations; United States Army Regulations; Field Service Regulations, United States Army; Guard Manual; Small Arms Firing Regulations.*

## MINERALOGY

(See GEOLOGY 5, 5a, 6, 7, 7a.)

## MINING ENGINEERING

HARRY HARKNESS STOEK, B.S., E.M., *Professor*

FRANCIS CHURCH LINCOLN, E.M., Ph.D., *Assistant Professor*

HERBERT HOUGHTON LAUER, E.M., *Instructor*

STEPHEN OSGOOD ANDROS, A.B., B.S., E.M., *Field Assistant*

1. ELEMENTARY MINING PRINCIPLES.—The general processes of mining engineering; terminology. Lectures; trips of inspection. *I; (1)*. Professor STOEK

2. EARTH AND ROCK EXCAVATION.—Explosives; blasting; drilling; boring; tunneling; shaft sinking; coal cutting. *II; (3)*.

Professor STOEK, Assistant Professor LINCOLN

*Prerequisite:* Chemistry 1a or 1b.

3. MINING METHODS.—Mining and timbering of bedded, vein, and placer deposits. *I; (2)*. Professor STOEK

*Prerequisite:* Mining Engineering 2.

4. MINE SURVEYING.—The application of general surveying methods to mine work; the description and use of instruments employed underground and in connecting surface and underground surveys; the platting and use of mine maps; mineral land survey-

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\*See note, page 379.

ing; the theory and use of solar attachments; determination of the meridian; theory and use of stadia; application of topographic and railroad surveying to mining conditions; estimation and prospecting of mineral deposits. *II*; (4). Mr. LAUER

*Prerequisite:* Civil Engineering 21.

5. MINE VENTILATION.—Mine gases; safety lamps; explosions in mines; rescue work; first aid; mine ventilation; mine lighting. *II*; (3). Mr. LAUER

*Prerequisite:* Chemistry 1a or 1b.

6. MECHANICAL ENGINEERING OF MINES.—Hoisting: ropes, cages, hoisting engines, and other appliances. Haulage: the different systems used underground and on the surface; the methods of loading and unloading; mine stables; transportation of workmen. Signaling. Drainage of mines: mine dams, mine pumps. Tipple arrangements; rock houses; ore bins. General surface plant. Design and drafting of mining plant. *I*; (3). Mr. LAUER

*Prerequisite:* Mechanical Engineering 16, or 11, or 23.

7. MINE ADMINISTRATION, ORGANIZATION, AND MINING LAW.—Mining companies. Trade agreements—relations between employers and employees. Transportation and marketing. The general mining laws of the several states, with particular attention to those of Illinois. *II*; (2). Professor STOEK

8. MINE PLANT.—Location; design; estimates for construction. *II*; (2). Mr. LAUER

9. PREPARATION OF COAL AND ORES.—The handling and utilization of coal: crushing, screening, washing, coking, briquetting, sampling, weathering. Ore dressing; milling. *I*; (2)

Assistant Professor LINCOLN

10. MINING LABORATORY.—Experiments with safety lamps, anemometers, water gages, mine fans, coal washing, and ore dressing machinery; *II*; (3). Professor STOEK, Assistant Professor LINCOLN

*Prerequisite:* Mining Engineering 5.

11. THESIS.—Individual investigation of a special mining subject; preparation of thesis giving review of the literature on the subject, the results of experimental work, and a general discussion of the subject. *II*; (3).

12. MINE DESIGN.—General theory of framed structures; design of mine structures of wood, steel, and masonry. *I*; (3).

Mr. LAUER

## COURSES FOR GRADUATES

Entrance upon graduate work in mining engineering presupposes a full undergraduate course in that subject.

101. ADVANCED COAL MINING.—The coal fields of the United States; methods of mining; the economics of coal mining: utilization, marketing, storage, and transportation of coal. *Twice a week; I, II;*  
Professor STOEK

102. ADVANCED PREPARATION OF COAL AND ORES.—*Twice a week; I, II.*  
Assistant Professor LINCOLN

## MODERN LANGUAGES

(See ENGLISH LANGUAGE AND LITERATURE, GERMANIC LANGUAGES AND LITERATURE, and ROMANCE LANGUAGES AND LITERATURE.)

## MUNICIPAL AND SANITARY ENGINEERING

ARTHUR NEWELL TALBOT, C.E., *Professor*

MELVIN LORENIUS ENGER, B.S., C.E., *Assistant Professor, Theoretical and Applied Mechanics*

GEORGE CONRAD HABERMEYER, B.S., *Associate*

VIRGIL R FLEMING, B.S., *Associate, Theoretical and Applied Mechanics*

PAUL HANSEN, B.S., *Associate*

2. WATER SUPPLY ENGINEERING.—Source of supply; hydraulics of wells; stream flow; impounding and storage reservoirs; conduits and pipe lines; pumps and pumping machinery; stand-pipes and elevated tanks; the distribution system; tests and standards of purity of potable water. Designing weekly. Turneure and Russell's *Public Water Supplies*. I; (4).

Assistant Professor ENGER, Mr. HABERMEYER, Mr. FLEMING  
*Prerequisite:* Theoretical and Applied Mechanics 9, 10; Chemistry I; Mechanical Engineering 11.

3. SEWERAGE.—The design and methods of construction of sewerage systems: Sanitary necessity of sewerage; water carriage systems, both separate and combined; surveys and general plans; hydraulics of sewers; house sewage and its removal; relation of rainfall to storm water flow; determination of size and capacity of sewers; forms and strength of sewer appurtenances; modern meth-

ods of sewage disposal; estimates and specifications. Designing weekly. Folwell's *Sewerage*; II; (3).

Assistant Professor ENGER, Mr. HABERMEYER, Mr. FLEMING

*Prerequisite:* Theoretical and Applied Mechanics 9, 10; Chemistry I; Municipal and Sanitary Engineering 2.

5a. BACTERIOLOGY.—The identification and classification of bacteria, and of allied organisms; their relations to health and to disease; methods of separation and cultivation; methods of air and water analysis. (For students in municipal and sanitary engineering.) I; last 7 weeks; (2).

Assistant Professor RAHN

*Prerequisite:* Civil Engineering 4a.

6a, b. WATER PURIFICATION, SEWAGE DISPOSAL, AND GENERAL SANITATION.—Impurities in water supplies and methods and processes of their removal; the modern methods of sewage disposal by filtration, chemical precipitation, irrigation; representative purification plants; garbage collection and disposal; sanitary restrictions and regulations and general sanitation. Lectures; seminar work; drafting. I; (3); II; (2). Professor TALBOT, Mr. HABERMEYER

*Prerequisite:* Municipal and Sanitary Engineering 2, 3, 5a; Chemistry I, 3, 10b.

7. WATER SUPPLY ENGINEERING.—Similar to Municipal and Sanitary Engineering 2, for students in sanitary science. Designing weekly. Turneure and Russell's *Public Water Supplies*. I; (4).

Mr. HABERMEYER

*Prerequisite:* Theoretical and Applied Mechanics 5, 12, 10; Chemistry 3.

8. SEWERAGE.—Similar to Municipal and Sanitary Engineering 3, for students in sanitary science. Designing weekly. Folwell's *Sewerage*. II; (3).

Mr. HABERMEYER

9. HYDRAULIC DESIGN AND CONSTRUCTION.—The design and methods of construction of reservoirs, dams, conduits, and waterways; hydraulic engineering problems. II; (2).

Assistant Professor ENGER

30. THESIS.—Investigation or design of an engineering problem. Required of seniors. II; (2). Professor TALBOT, Mr. HABERMEYER

#### COURSES FOR GRADUATES

Entrance upon graduate work in municipal and sanitary engineering presupposes a full undergraduate course in that subject.

102. WATER SUPPLY ENGINEERING.—Sources and requirements of water supply; general water-works construction; pumps and

pumping; design of reservoirs and elevated tanks; water-works operation and the valuation of plants. *One to three times a week; I or II.* Professor TALBOT

103. SEWERAGE.—General sewerage design and construction; sewerage systems; hydraulics of sewers; and a study of run-off. *Once or twice a week; II.* Professor TALBOT

106. WATER PURIFICATION, SEWAGE DISPOSAL AND GENERAL SANITATION.—The design, construction, and operation of water purification plants and of sewage disposal works; the study of existing plants; comparison of results and cost of construction and operation; experimental work on water filters and septic tanks; garbage disposal; general sanitation. *Once a week; II.*

Professor TALBOT

## MUSIC

CHARLES HENRY MILLS, D.Mus., F.R.C.O., *Director, Professor*

GEORGE FOSS SCHWARTZ, A.M., M.B., *Assistant Professor*

CONSTANCE BARLOW-SMITH, *Instructor, Sight-Singing, Ear Training, Public School Music*

HENRI JACOBUS VAN DEN BERG, *Instructor, Piano*

ALBERT AUSTIN HARDING, *Instructor, Band Instruments, Director of the Band*

LOIS DERWENTWATER MCCOBB, *Instructor, Voice*

FLORENCE MARY KIRKUP, *Instructor, Voice*

MC ELROY JOHNSTON, *Instructor, Voice*

EDNA ALMEDA TREAT, Mus.B., *Instructor, Piano*

EDSON WILFRED MORPHY, *Instructor, Violin*

LOWELL LESLIE TOWNSEND, A.M., *Instructor, Piano*

1. HISTORY OF MUSIC.—The development of music; the rise of polyphony and dramatic music; the origin and progress of the oratorio; the evolution of instruments and instrumental forms; the lives of composers. Lectures; assigned collateral readings. *I, II; (2).* Assistant Professor SCHWARTZ

1a. ACOUSTICS.—*I, or II; (2).* Professor MILLS

2. HARMONY.—*I, II; (2).* Assistant Professor SCHWARTZ

3. ADVANCED HARMONY.—*I, II; (3).* Assistant Professor SCHWARTZ

4. COUNTERPOINT, CANON, AND FUGUE.—*I, II; (3).*

Professor MILLS

15. GENERAL THEORY, FREE COMPOSITION.—*I, II; (2½).*

Professor MILLS

PIANO<sup>2</sup>

Professor MILLS, Mr. VAN DEN BERG, Miss TREAT. Mr. TOWNSEND

6a, 6b, 6c. PREPARATORY COURSE: THREE YEARS.—Special attention is given to the formation of a correct touch and technique, and to intelligence in interpretation. In the examination at the conclusion of the course students are required to play: Simple scales and arpeggios at fairly rapid tempo; scales in double octaves at a moderate speed; Bach, two-part invention; Czerny, *Op. 229*; an easy sonata of Haydn, Mozart, or Beethoven. *I, II; no collegiate credit.*

7. *First Year.*—Development of technique; Czerny, *Op. 229. Bks. 3, 4; Bach, Two-part Inventions*; sonatas of Haydn and Mozart; easier sonatas of Beethoven; Mendelssohn, *Songs Without Words*; compositions (smaller works) of Schubert, Raff, Grieg, Chaminade, Moszkowski, and others. *I, II; (6).*

7a. *One Year.*—The first year's work in piano taken as a minor subject by collegiate students majoring in voice or violin. *I, II; (2).*

8. *Second Year.*—Czerny, *Op. 740*; Pacher, *Octave Studies*; Bach, *Three-part Inventions*, selections from *French Suites*; sonatas and other compositions of Scarlatti, Beethoven, Schubert, Schumann, Mendelssohn, Weber, Raff, Rubinstein, Saint Saens, Godard, MacDowell, and others. *I, II; (6).*

9. *Third Year.*—Selections: Clementi, *Gradus ad Parnassum*; Moscheles, *Op. 70*; Kullak, *Seven Octave Studies, Bk. 2*; Bach, *Well-Tempered Clavichord*; sonatas and concertos by Mendelssohn, Weber, Beethoven, Hummel; selections from works of Bach, Chopin, Schubert, Schumann, Brassin, Rubinstein, Liszt, Moszkowski, Scharwenka, and other modern composers. *I, II; (7).*

10. *Fourth Year.*—Selections: Octave Studies; Clementi, *Gradus*, continued; Bach, *Well-Tempered Clavichord*, continued; Chopin, Henselt, *Etudes*, etc.; sonatas by Beethoven and selections from works of modern composers of most advanced grade. *I, II; (8).*

<sup>1</sup> Music 5, *I*, may be taken with Course 4, *II*, if desired.

<sup>2</sup> Since it is undesirable and impossible to establish a set course for all students, the course outline given above must be taken only as indicating the general scope of the work required of each student.

## VOICE\*

Mr. JOHNSTON, Miss MCCOBB, Miss KIRKUP

11a, 11b, 11c. *Preparatory Course: Three years.* The fundamental principles of voice culture, viz., correct breathing and the proper placing of the voice. In the examination at the conclusion of the course students are required to sing: Simple scales and arpeggios; studies selected from Concone, Sieber, Panofka, and Panseron; songs selected from Schubert, Schumann, and Mendelssohn. *I, II*; no collegiate credit.

12. *First Year.*—Tone Production. Panofka: *Op. 85*. Concone: *Op. 10, 17*; Spicker: *Masterpieces of Vocalization, Book I* or substitute. Selected songs from Schubert, Franz, Greig, and modern composers. *I, II*; (6).

12a. *One Year.*—The first year's work in voice taken as a minor subject by collegiate students majoring in piano or violin. *I, II*; (2).

13. *Second Year.*—Tone Production. Vaccai: *Practical Method*; Panofka: *Op. 81*. Spicker: *Book II*; Panseron: *Bordogni*; Songs from German, French, Italian, and modern composers.

14. *Third Year.*—Tone Production. Spicker: *Book III*; Lamperti; Lablache; simple arias from opera and oratorios; selected songs. *I, II*; (7).

15. *Fourth Year.*—Tone Production. Spicker: *Book IV*. Ravini; Rubini; selected songs, opera, and oratorios. *I, II*; (3).

NOTE.—The above list will be supplemented by excerpts from modern composers—especially the modern American school—during the entire course.

## VIOLIN\*

Mr. MORPHY

16a, 16b, 16c. *Preparatory course: Three years.* In the examination at the conclusion of the course the students are required to play: Gordon's Fountain Studies; Hermann's Scale Studies; Wohlfahrt's Etudes, Book I; Kayser's Etudes; Pleyel, Duet; selections from Weiss and Blumensteugel; miscellaneous pieces by Dancla, Papini, Weidig, Sitt, etc. *I, II*; no collegiate credit.

17. *First Year.*—Scales and Arpeggios through the seventh position; Kreutzer Studies; David Violin School (advanced) Mozart

\* Since it is undesirable and impossible to establish a set course for all students, the course outline given above must be taken only as indicating the general scope of the work required of each student.



Sonatas, Nos. 5, 7, 8, 12, and 17; Concertos, Viotti, Kreutzer. *I, II; (6).*

17a. *One year.*—The first year's work in violin taken as a minor subject by collegiate students majoring in piano or voice. *I, II; (2).*

18. *Second Year.*—Kreutzer Studies: Meerts' Mechanism of the Violin (advanced); Beethoven, Sonatas, Nos. 1, 5, 6. Concertos, Rode. Andante and rondo Capriccio David. *I, II; (6).*

19. *Third Year.*—Sevcik Studies; Fiorillo and Rode Studies (selected); Sonatas, Greig Op. 8, Gade; Concertos; No. 2. Mozart A, E flat. *I, II; (7).*

20. *Fourth Year.*—Gavinies Studies; Dancla Studies Op. 73; Sonatas, Grieg Op. 43, Braems 78; Concertos, Mendelssohn, Bruch, etc. *I, II; (8).*

#### VIOLONCELLO\*

Assistant Professor SCHWARTZ

31a, 31b, 31c. *Preparatory Course: Three years.* At the conclusion of the course the student will be examined upon the following: DeSwert, Cello Method; Klengel, Technical Studies; Litoff, Volkslieder Album, two parts; Marx Markus, Op. 40; characteristic pieces. *I, II; no collegiate credit.*

32. *First Year.*—Dotzanert, Selected Studies; Furino, Polonaise; Golterman, Nocturnes; Kengel, Concertino. Op. 7. *I, II; (6).*

33. *Second Year.*—Lee Studies: Op. 31, No. 1; Romberg, Op. 42, 46, 65; Golterman, Concerto in G. *I, II; (6).*

34. *Third Year.*—Lee Studies: Op. 31, No. 2; Golterman, Concerto in D; Klengel, Concertstück in D. *I, II; (7).*

21. UNIVERSITY ORCHESTRA.—Two-hour rehearsal once a week. *I, II; (1).* Professor MILLS

22. UNIVERSITY CHORAL SOCIETY.—One-hour rehearsal once a week. *I, II; (½).* Professor MILLS

23. EAR TRAINING.—Two hours a week for two years; required of all music students, except students in the course in Public School Music (see Music 23a). *I, II; (1, second year).*

Mrs. CONSTANCE BARLOW SMITH

23a. EAR TRAINING.—Four hours a week for one year; required of students in the course in Public School Music. Theory and practice teaching. *I, II; (1).* Mrs. CONSTANCE BARLOW SMITH

\* Since it is undesirable and impossible to establish a set course for all students, the course outline given above must be taken only as indicating the general scope of the work required of each student.

24. SIGHT SINGING.—Two hours a week for two years; required of all music students, except students in the course in Public School Music (see Music 24a). *I, II; (1, second year).*

Mrs. CONSTANCE BARLOW SMITH

24a. SIGHT SINGING.—Four hours a week for one year; required of students in the course in Public School Music. Theory and practice teaching. *I, II; (1).* Mrs. CONSTANCE BARLOW SMITH

25. METHODS OF TEACHING.—Elements of theory, eye and ear training, the limitations of the child-voice, selection of material, pedagogical presentations, appreciation work for the high school. (Offered primarily for students who desire to teach music successfully in the public schools.) *I, II; (4).*

Mrs. CONSTANCE BARLOW SMITH

26. BAND INSTRUMENTS.—Band, orchestra, or solo work. *I, II; no credit.*

Mr. A. A. HARDING

27. ENSEMBLE CLASS.—Trios, Quartets, and Quintets by classical and modern composers. (Open to all students who are sufficiently advanced to undertake the course profitably.) *I, II; no credit.*

## PALEONTOLOGY

(See GEOLOGY 1a, 16, 18, 19, 20, 21.)

## PHILOLOGY

(See THE CLASSICS, ENGLISH LANGUAGE AND LITERATURE, GERMANIC LANGUAGES AND LITERATURE, and ROMANCE LANGUAGES AND LITERATURE.)

## PHILOSOPHY

(See also PSYCHOLOGY and EDUCATION.)

ARTHUR HILL DANIELS, Ph.D., *Professor*

BOYD HENRY BODE, Ph.D., *Professor*

QUEEN LOIS SHEPHERD, A.M., *Assistant*

### Honors

Candidates for honors in philosophy must offer:

1. In the major subject, 24 hours, 6 of which must be in psychology.

2. Minors in either: psychology (at least 6 hours in addition to the amount of psychology required for the major) and any one

other subject listed below; or any two subjects from the same group—

- (a) Economics; history, political science; education; sociology.
- (b) English; French; German; Greek; Latin.
- (c) Botany; chemistry; mathematics; physics; zoology.

No course in any subject of the above groups may be counted for the minor requirement if it is excluded from the major requirement of its respective department.

Students who make philosophy a major should take at least one year of psychology. With the exception of I and 10, no course in philosophy may be taken before the completion of two years of university work.

1. LOGIC.—The principles of reasoning; detection of fallacies; evidence. I; (3). Professor BODE, Miss SHEPHERD

*Prerequisite:* One year of university work.

1b. LOGIC.—(The same as 1.) II; (3).

Professor BODE, Miss SHEPHERD

2. INTRODUCTION TO PHILOSOPHY.—The relation of philosophy to modern science; problems of philosophy; representative forms of philosophic theory. II; (3). Professor BODE

3. ANCIENT AND MEDIEVAL PHILOSOPHY.—The development of speculative thought; Greek philosophers; the medieval period. I; (3). Professor DANIELS

*Prerequisite:* Three hours in philosophy.

4. MODERN PHILOSOPHY.—Problems and conceptions in philosophy from Descartes to the present time. Selections from the masterpieces of this period. II; (3). Professor DANIELS

*Prerequisite:* Philosophy 3.

7. ETHICS.—The beginnings and growth of morality; leading conceptions of moral theory; typical social and economic problems of the present. II; (3). Professor DANIELS

*Prerequisite:* Three hours in philosophy.

[8. ESTHETICS.—The appreciation of art and nature; place of such appreciation in life; primitive arts and appreciation; modifications of the esthetic (such as the sublime and the ugly); the fine arts. I; (3). Not given in 1912-13.

*Prerequisite:* An elementary course in philosophy or psychology.]

9. POLITICAL AND SOCIAL ETHICS.—Moral principles applied to political and social relations. I; (2). Professor DANIELS

[10. THE PHILOSOPHIC THOUGHT OF THE NINETEENTH CENTURY AS REFLECTED IN ENGLISH LITERATURE.—Wordsworth; Carlyle; Emerson; Tennyson; Browning; Arnold. *I*; (2). Not given in 1912-13. Professor BODE]

[11. HISTORY AND PHILOSOPHY OF RELIGION.—The philosophical interpretation of religious consciousness; various religious concepts: God; revelation; inspiration, dogma; faith; prayer; immortality; evil; morality and religion. *I, II*; (2). Not given in 1912-13.

Professor DANIELS

*Prerequisite*: Senior or graduate standing; six hours in psychology, philosophy, or both.]

15. THE BRITISH PHILOSOPHERS OF THE EIGHTEENTH CENTURY.—Locke, Berkeley, and Hume. *I*; (3). Professor BODE

*Prerequisite*: Philosophy 2 or 3 or 4.

16. AMERICAN PHILOSOPHY.—*II*; (3). Professor BODE

*Prerequisite*: Philosophy 15.

#### COURSES FOR GRADUATES

Every student entering upon graduate work in philosophy must have had a thorough general course in the history of philosophy, a course in logic, and a general course in psychology.

[101. THE PHILOSOPHY OF PLATO AND ARISTOTLE.—*Twice a week*; *I, II*. Not given in 1912-13. Professor DANIELS]

102. SEMINAR: CONTEMPORARY PHILOSOPHY.—Present day idealism, realism, and pragmatism. *Twice a week*; *I, II*. Professor BODE

[103. SEMINAR: ETHICAL THEORY.—*Once a week*; *I, II*. Not given in 1912-13. Professor DANIELS]

104. THE PHILOSOPHY OF DESCARTES, SPINOZA, AND LEIBNIZ.—*Twice a week*; *I*. Professor DANIELS

105. THE PHILOSOPHY OF SCHOPENHAUER AND LOTZE.—*Twice a week*; *II*. Professor DANIELS

### PHYSICAL TRAINING

#### FOR MEN

GEORGE A HUFF, *Director*

HARRY LOVERING GILL, *Assistant Director, Instructor, Track*

LEO GREGORY HANA, *Director, Men's Gymnasium*

EDWARD JOHN MANLEY, *Instructor, Swimming*

ROY NEWTON FARGO, B.S., *Assistant*

RALPH JONES, *Assistant*

1. GYMNASIUM PRACTICE.—Two hours' gymnasium drill each week. (Required of freshmen.) *I, II; (1); arrange time.*

Mr. HANA

1a. PERSONAL HYGIENE.—Six lectures. Required in conjunction with Physical Training 1. *I.*

Dean CLARK

2. GYMNASIUM PRACTICE.—Two hours each week in advanced heavy apparatus work. *I, II; arrange time.*

Mr. HANA

#### FOR WOMEN

GERTRUDE EVELYN MOULTON, A.B., *Director*

MARY EDITH WILLIAMS, A.M., *Instructor*

VERNA BROOKS, A.B., *Assistant*

MARION CHARLOTTE LANDEE, *Assistant*

ROSA-LEE GAUT, B.Mus., *Pianist*

7. PRACTICE.—Class work and games. (Required of freshmen.) *I, II; (1).*

Miss MOULTON, Miss WILLIAMS, Miss BROOKS, Miss LANDEE

8. PRACTICE.—(Continuation of 7. Second year, elective.) *I, II; (1).*

Miss WILLIAMS, Miss BROOKS

9. HYGIENE.—(Required of all freshmen girls.) *I; (1).*

Acting Dean FAWCETT

10. TEACHERS' COURSE.—Third year. Practice in the public schools, two hours; theory, one hour. *I, II.*

Miss MOULTON, Miss BROOKS

11. TEACHERS' COURSE.—Fourth year. Practice teaching in the gymnasium, two hours; theory, one hour. *I, II.*

Miss WILLIAMS, Miss LANDEE

#### PHYSICS

ALBERT PRUDEN CARMAN, D.Sc., *Professor*

CHARLES TOBIAS KNIPP, Ph.D., *Assistant Professor*

FLOYD ROWE WATSON, Ph.D., *Assistant Professor*

WILLIAM FREDERICK SCHULZ, E.E., Ph.D., *Assistant Professor*

JAKOB KUNZ, Ph.D., *Assistant Professor, Mathematical Physics*

ELMER HOWARD WILLIAMS, Ph.D., *Associate*

JOHN WESLEY HORNBECK, A.M., *Instructor*

GLENN ALFRED SHOOK, A.B., *Instructor*

ORRIN HAROLD SMITH, A.M., *Assistant*  
 LLOYD THEODORE JONES, A.M., *Assistant*  
 OSCAR ALAN RANDOLPH, B.S., *Assistant*  
 EARLE HORACE WARNER, A.B., *Part-time Assistant*  
 WILLIAM HARRY BAIR, B.S., *Part-time Assistant*

#### INTRODUCTORY COURSES FOR UNDERGRADUATES

1. GENERAL PHYSICS.—Lectures with class-room demonstrations; recitations; written exercises. (For sophomores in engineering, mathematics, physics, and chemistry.) *I*; (3). *II*; (2).

Professor CARMAN, Assistant Professor SCHULZ, Mr. HORNBECK  
 Mr. SHOOK, Mr. JONES, Mr. WARNER, Mr. BAIR

*Prerequisite*: Mathematics 3 or 4; registration in Physics 3.

3. PHYSICAL MEASUREMENTS.—Laboratory experiments; quizzes in connection with Physics 1. *I*, *II*; (2).

Assistant Professor SCHULZ, Mr. HORNBECK, Mr. SHOOK, Mr.  
 JONES, Mr. WARNER, Mr. BAIR

*Prerequisite*: See Physics 1.

2a. GENERAL PHYSICS.—Lectures, with class-room demonstrations; recitations. (For students in courses in arts and science.) *I*, *II*; (2½). Assistant Professor WATSON, Dr. WILLIAMS

*Prerequisite*: Completion of or registration in Mathematics 3 or 4; registration in Physics 2b.

2b. INTRODUCTORY LABORATORY PHYSICS.—Physical measurements. *I*, *II*; (2½). Dr. WILLIAMS

*Prerequisite*: See Physics 2a.

15. ELECTRICITY AND MAGNETISM.—Laboratory; lectures; assigned readings; reports. *I*, *II*; (2).

Assistant Professor KNIPP, Mr. SMITH  
*Prerequisite*: Physics 1, 3; or 2a, 2b.

16. HEAT.—*I*; (2). Assistant Professor WATSON

*Prerequisite*: Physics 1, 3; or 2a, 2b.

17. LIGHT.—Recitations; laboratory. Edser's *Light*. *II*; (2).

Assistant Professor SCHULZ  
*Prerequisite*: Physics 1, 3; or 2a, 2b.

18. TEACHERS' COURSE.—*I*; (2). Assistant Professor WATSON

*Prerequisite*: Physics 1, 3; or 2a, 2b.

## ADVANCED COURSES FOR GRADUATES AND UNDERGRADUATES

4. ELECTRICAL AND MAGNETIC MEASUREMENTS.—Exact electrical and magnetic measurements with accompanying theory. Laboratory exercises; discussions; recitations. *I, II; (2).*

Assistant Professor KNIPP, Mr. SMITH, Mr. RANDOLPH

*Prerequisite:* Physics 1, 3; or 2a, 2b; Mathematics 7, 9.

14. MECHANICS AND ADVANCED GENERAL PHYSICS.—An introduction to theoretical physics involving the calculus. *First semester:* dynamics with a brief introduction to thermodynamics. *Second semester:* elementary mathematical theory of electricity and magnetism, with a brief introduction to theory of light. *I, II; (3).*

Assistant Professor KUNZ

*Prerequisite:* A course in general physics, such as Physics 2a and 2b, or 1 and 3, and a course in calculus.

20a. LIGHT.—Special phenomena; modern theories; readings in texts of Drude, Wood, and Preston. Lectures; recitations. *I or II; (2).*

Assistant Professor SCHULZ

*Prerequisite:* Physics 1, 3; or 2a, 2b; Mathematics 7, 9; or 8a.

20b. LIGHT.—Light measurements. Laboratory. *I or II; (2 to 5).*

Assistant Professor SCHULZ

*Prerequisite:* Physics 1, 3; or 2a, 2b; Physics 17 desired.

21. RECENT ADVANCES IN PHYSICAL SCIENCE.—Lectures illustrated by experiments. *II; (1).*

Assistant Professor KNIPP

23. SOUND.—*Twice a week; II.*

Assistant Professor WATSON

25. HEAT.—*II; (2).*

Assistant Professor WATSON

*Prerequisite:* Physics 1, 3; or 2a, 2b; Physics 16 advised.

29. ELECTRICAL OSCILLATIONS.—Oscillating currents of both low and high frequencies, with particular attention in the second semester to the theory to wave telegraphy and telephony. *I, II; (3).*

Professor CARMAN

*Prerequisite:* Physics 1, 3; Mathematics 7, 9.

30a. INTRODUCTION TO THEORETICAL ELECTRICITY.—The phenomena with elementary calculus methods. Lectures; recitations; occasional demonstrations. Foster and Porter's *Electricity and Magnetism*; Thompson's *Elements of Electricity and Magnetism*. *I, II; (2).*

Assistant Professor KNIPP

30b. ELECTRICITY AND MAGNETISM.—Electrical measurements; self and mutual induction; standardization and calibration work; electrical discharge through gases. *I or II; (2 to 5).* Dr. WILLIAMS

31. SPECIAL PROBLEMS IN ADVANCED PHYSICAL MEASUREMENTS.—(2 or 3).

Professor CARMAN, Assistant Professors KNIPP, WATSON, and SCHULZ, Dr. WILLIAMS

COURSES FOR GRADUATES

The prerequisite for graduate work in physics is a college course in general physics with a year's laboratory course in introductory physical measurements. The student who is to do major work in physics should also have had additional courses in physics or teaching experience, unless the training in his minor subject, mathematics or chemistry, has been strong and complete. He should also have a knowledge of French and German sufficient to use references in these languages. The courses named below are those open for candidates for the master's or doctor's degree. A large part of the last year's work of the candidate for the doctor's degree is investigational, along either the experimental or the theoretical side of physics. In addition to these major graduate courses, the courses in elementary dynamics, heat, light, electrical measurements, and introductory electrical theory (courses 114, 125, 120, 104, 130), are arranged with certain additions for graduate credit. The "intermediate" courses on heat, light, and electricity and magnetism (courses 15, 16, 17), may be offered by students making a minor in physics.

[121. RECENT ADVANCES IN PHYSICAL SCIENCE.—Lectures illustrated by experiments. Written reports giving original discussions of one or more of the topics discussed during the semester. Not given in 1912-13. Assistant Professor KNIPP]

123. SOUND.—Lectures; recitations. Rayleigh's *Sound*, Auerbach's *Akustik*, and Barton's *Sound*. *Twice a week; I, II.*

Assistant Professor WATSON

124. CONDUCTION OF ELECTRICITY THROUGH GASES.—The electrical conductivity of gases; ions and ionisation; the effect of a magnetic field; the motion of ions; spark discharge; cathode rays; Roentgen rays; canal or positive rays; related phenomena of radioactivity. Lectures; discussions. *Three times a week; I, II.*

Assistant Professor KNIPP

126. PHYSICS COLLOQUIUM.—Weekly meetings of the instructors and advanced students of the department for the presentation and discussion of papers on current problems. Many of these papers



are on investigations in progress in the laboratory and experimental demonstrations are used. Attendance is expected of all the graduate students, though it is not registered except in the cases of those making special reports on original investigations. *Once a week; I, II.*

127. ELECTRON THEORY.—Seminar. The theories of the constitution of the atom; the phenomena of the emission and absorption spectra. (Of special interest to students in advanced chemistry.) *Twice a week; II.* Assistant Professor KUNZ

131. INVESTIGATION OF SPECIAL PROBLEMS.—Advanced laboratory or design and calculation. A problem worked out with the advice and direction of the instructor. *Two to four times a week; I, II.*

Professor CARMAN, Assistant Professors KNIPP, WATSON, SCHULZ, and KUNZ, Dr. WILLIAMS

132. MATHEMATICAL PHYSICS.—Special phases in theoretical physics.

[(a) DYNAMICS.—First part: dynamics of a material system; determination of the center of gravity; of moment of inertia and of potentials. Second part: the principle of least action; Lagrange's equations; motions of the top and applications. *Three times a week; I, II.* Not given in 1912-13. Assistant Professor KUNZ]

(b) ELECTRODYNAMICS.—Lectures; collateral reading. Solution of problems from Jeans' *Mathematical Theory of Electricity and Magnetism*. The potential theory: spherical harmonics, conjugate functions, some theorems of the vector analysis; capacities, coefficients of self and mutual induction; theory of absolute electrical measurements; the condenser discharge with its application in wireless telegraphy; Maxwell's theory, with some applications in optics, such as the optical properties of metals; modifications of Maxwell's theory: the theory of relativity and the electromagnetic emission theory of light. (Continued in the following year in Physics 132d.)

Assistant Professor KUNZ

[(c) THERMODYNAMICS.—Fundamental principles with applications to physical and chemical phenomena. Lectures; recitations. *Three times a week; I, II.* Not given in 1912-13.

Assistant Professor KUNZ]

[(d) THEORY OF ELECTRICAL OSCILLATIONS AND CYLINDRICAL HARMONICS.—Electrical oscillations along parallel wires, the vibrations from a Hertz oscillator and from an antenna, the resonance phenomena between sending and receiving stations and the absorp-

tion of electrical waves; cylindrical harmonics used in problems of a vibrating membrane, of the conduction of heat and electricity through cylinders, and of electrical waves proceeding along wires. *Twice a week; I, II.* Not given in 1912-13.

Assistant Professor KUNZ]

133. SEMINAR.—*Three or five times a week; I, II.*

Professor CARMAN, Assistant Professors KNIPP, WATSON, SCHULZ, KUNZ

## PHYSIOLOGY

WILLIAM EDWARD BURGE, Ph.D., *Assistant Professor*

OTIS ORIN STANLEY, M.S., M.D., *Instructor*

JOSEPH HOWARD BEARD, A.M., M.D., *Instructor*

Of the courses outlined below, 1 and 2 are designed primarily for medical students, or for those intending to specialize in histology or physiology; course 4, for prospective teachers of high-school biology or students from other colleges desiring a course in general physiology; courses 3, 5, may be taken by seniors in the medical course and course 103 by graduate students.

The laboratory is equipped for the pursuance of research involving the use of apparatus necessary for physiological, histological, bacteriological, and chemical work.

1. HISTOLOGY.—Fundamental mammalian tissues; microscopic anatomy of the organs. Lectures and laboratory. (Full medical credit in histology.) *I; (5).* Assistant Professor BURGE, Dr. BEARD

*Prerequisite:* Physics 2a; Chemistry 1, 2, 3, 5a, 9, 9c; Zoology 2, 3.

2. MAJOR COURSE.—Physiology of nerve and muscle; circulation; respiration; secretion; digestion; metabolism. Lectures and laboratory. (Full medical credit in physiology.) *II; (10).*

Assistant Professor BURGE, Dr. BEARD

*Prerequisite:* The same as for Physiology 1.

3. UNDERGRADUATE THESIS.—(For undergraduates who wish a thesis course.)

4. MINOR COURSE.—Practical hygiene; teaching physiology in high schools. Lecture demonstrations; recitations; laboratory work. *I; (5).*

Assistant Professor BURGE, Dr. BEARD

*Prerequisite:* Chemistry 1; Zoology 1.

5. SPECIAL PHYSIOLOGY.—(For advanced students who wish to take up a special line of work not specified in one of the other courses and not involving the preparation of a thesis.) Laboratory; conferences. *I, II*; (3 hours or more).

Assistant Professor BURGE, Dr. STANLEY, Dr. BEARD

*Prerequisite*: The consent of the head of the department.

6. HYGIENE.—See Physical Training 9.

#### COURSE FOR GRADUATES

##### 103. RESEARCH.

Assistant Professor BURGE, Dr. STANLEY, Dr. BEARD

III. PHYSIOLOGICAL JOURNAL CLUB.—Meetings of the teaching staff of the department, the graduate students, and advanced undergraduates to discuss articles of interest in current journals. Each student is expected to report a paper about once in two months.

#### POLITICAL SCIENCE

(See also ECONOMICS, HISTORY, and SOCIOLOGY.)

JAMES WILFORD GARNER, Ph.D., *Professor*

JOHN ARCHIBALD FAIRLIE, Ph.D., *Professor*

WALTER FAIRLEIGH DODD, Ph.D., *Assistant Professor*

JOHN MABRY MATHEWS, Ph.D., *Associate*

#### *Honors*

For honors in political science:

1. The major of 24 hours in political science may, with the consent of the department, include courses in constitutional history (History 4 and 14), political philosophy (Philosophy 5), or not exceeding 6 hours of Law.

2. One minor must be history, in which courses must be offered aggregating not less than 12 hours. The other minor may be economics, sociology, or philosophy, aggregating not less than 9 hours.

3. A reading knowledge of one modern language is advised.

#### COURSES FOR UNDERGRADUATES

Courses 1 and 3 are intended to furnish a general survey of the field of national, state, and local government in the United States, and should be taken by all students who expect to specialize in political science.

1. AMERICAN NATIONAL GOVERNMENT.—Historical development, organization, powers, limitations, and practical working of national government in the United States. *I*; (3).

Professor GARNER, Dr. MATHEWS

*Prerequisite:* Thirty hours of university work.

3. STATE AND LOCAL GOVERNMENT.—Powers, obligations, and limitations of states in the Federal Union; formation and admission of states; development of state constitutions; organization of state and local government; political methods. (A continuation of course 1; may be taken independently). *II*; (3).

Professor GARNER, Dr. MATHEWS

*Prerequisite:* Thirty hours of university work.

16. GOVERNMENT OF ILLINOIS.—Constitutional development; organization and administration of state and local government; the legislature; the executive; the judiciary; state officers and institutions; county, town, and municipal government. *II*; (2).

Professor FAIRLIE

*Prerequisite:* Thirty hours of university work.

#### ADVANCED COURSES FOR UNDERGRADUATES AND GRADUATES

(At least junior standing required)

4. MUNICIPAL GOVERNMENT.—The growth of cities; municipal organization and functions in the United States; the mayor and council; commission government; police, light, and water supply; city planning; urban transportation; municipal ownership and regulation of public utilities; charities; education. Lectures; assigned readings; reports. *I*; (3).

Professor FAIRLIE

*Prerequisite:* One course in political science or Economics 1.

5. CONSTITUTIONAL LAW OF THE UNITED STATES.—The judicial interpretation of the constitution of the United States; judicial power to declare laws unconstitutional; separation of governmental powers; relation between state and national governments; fundamental rights under the constitution (due process of law, contract); territories and dependencies; national powers with respect to taxation, commerce; jurisdiction of United States courts. *I*; (4).

Assistant Professor DODD

*Prerequisite:* Political Science 1.

6. INTERNATIONAL LAW.—The development of the law of nations; its nature, source, and present status; the equality of states; the doctrine of intervention; the laws of war and peace; the right

and duties of neutrals; the arbitration movement. Lectures; assigned readings; reports. *I*; (3). Professor GARNER

*Prerequisite:* Graduate or senior standing, or junior standing with 6 hours of history, 5 hours of political science.

[7. AMERICAN DIPLOMACY.—Genesis and present organization of the Department of State; the diplomatic service; the treaty making power; the methods and traditional principles of the foreign policy of the United States; historical review of the principal diplomatic controversies between the United States and foreign powers from the foundation of the government to the present time; the rise of the United States to the position of a world power. *II*; (3). Given in alternate years; not given in 1912-13. Dr. MATHEWS

*Prerequisite:* Junior standing and Political Science 1 or History 3.]

9. PRINCIPLES OF JURISPRUDENCE.—The nature of law; historical development of Roman and English legal systems; English common law in the United States; sources of law and relation between statutes and judicial decisions; brief discussion of the various branches of law (crime, tort, contract) and their relation to one another. *I*; (3). Assistant Professor DODD

*Prerequisite:* Course 1 or its equivalent; junior standing.

10. ADMINISTRATIVE LAW IN THE UNITED STATES.—Separation of governmental powers and delegation of legislative power; federal and state administrative organizations; powers of administrative officers; methods of enforcing governmental commands; remedies of the individual against unlawful action of public officials (civil suit, criminal action, mandamus, injunction). *II*; (3).

Assistant Professor DODD

*Prerequisite:* Course 5 and at least junior standing.

11. CONSTITUTIONAL ASPECTS OF SOCIAL AND INDUSTRIAL PROBLEMS.—The police power for the protection of the public safety, health, and welfare; constitutional limitations upon legislation concerning the public health and safety, the control of public service corporations and combinations of capital, and labor legislation. *II*; (3).

Assistant Professor DODD

*Prerequisite:* Senior standing and at least 5 hours in political science; Political Science 5, or Economics 12 recommended.

12. NATIONAL ADMINISTRATION.—Administrative powers of the President and Congress; executive departments and administrative

services of the national government; judicial administration and the relation of the courts to the executive authorities. *II*; (3).

Professor FAIRLIE

*Prerequisite:* Political Science 1.

13. STATE ADMINISTRATION IN THE UNITED STATES.—The administrative position of the governor, and the organization of the state administrative departments; state administrative disintegration and the influence of the diffusion of executive power upon the enforcement of state law; organization and powers of state boards, commissions, and quasi-judicial tribunals; tendencies toward centralization in the administration of taxation, education, and other state functions; methods of control over state administrative officers. *I*; (3).

Dr. MATHEWS

*Prerequisite:* Political Science 3 or its equivalent.

14. POLITICAL PARTIES AND METHODS.—Development of political parties; party organization and methods in the United States and Great Britain; recent legislation on primary elections and corrupt practices. *I*; (2).

Professor FAIRLIE

*Prerequisite:* One course in political science.

18. WORLD POLITICS.—The main currents of international politics in Europe since the Treaty of Berlin; the balance of power, the mutual relations and present grouping of the principal European states, and the extension of their interests in the Near and Far East; the colonial expansion of the United States since the Spanish War, and the present position of the United States as a world power. (Given in alternate years; course 7 will be given in its place in 1913-14.) *II*; (3).

Dr. MATHEWS

*Prerequisite:* Junior standing and History 1; History 20 recommended.

21. BRITISH GOVERNMENT.—Political institutions in the United Kingdom and the British possessions: the Crown; the Cabinet; the House of Commons; the House of Lords; the party system; the courts of law; local government; government in the Crown Colonies and the self-governing colonies; recent developments and proposed changes. (Open to graduate students and to seniors who have had six hours in political science.) *I*; (3).

Professor FAIRLIE

22. CONTINENTAL EUROPEAN GOVERNMENTS.—The national political systems of France, Germany, Austria-Hungary, Italy, and Switzerland; constitutional beginnings; political organizations;

methods of legislation and administration; constitutional guaranties for the protection of individual rights. (Open to graduate students and seniors who have had six hours in political science; History 20 recommended.) *II*; (3).  
Professor GARNER

28. PROBLEMS OF CONTEMPORARY POLITICS.—The larger questions of present day politics, domestic and foreign; such as the initiative and the referendum; proportional representation; state socialism; universal suffrage; electoral reform; local self-government; judicial reform, parliamentary government, the Monroe Doctrine. Reports by individual members of the class and general discussion. *II*; (2).  
Professor GARNER

*Prerequisite:* Senior or graduate standing.

[30. LAW OF TAXATION.—Constitutional limitations upon the taxing power; legal rules governing the assessment and collection of taxes. *II*; (3). Not given in 1912-13.

Assistant Professor DODD

*Prerequisite:* Political Science 5 or Economics 5.]

#### COURSES FOR GRADUATES

101. HISTORY OF POLITICAL THEORIES.—Development and history of ancient, medieval, and modern political thought; political theories of Aristotle, Machiavelli, Hobbes, Locke, Rousseau, Montesquieu, and others; evolution of American political ideas. *II*.

Professor GARNER

102. THE NATURE OF THE STATE.—The principles, methods, and relations of political science; the origin, nature, forms, and functions of the state; sovereignty and liberty; citizenship and nationality; constitutions; principles of political organization. *I*.

Professor GARNER

103. SEMINAR IN POLITICAL SCIENCE AND PUBLIC LAW.—Special problems; reports; discussions and criticism. The research work of candidates who are writing theses is under the direction of some instructor, to whom they report frequently. *I, II*.

104. MUNICIPAL ADMINISTRATION.—Municipal organization and functions in the United States and Europe: the relations between city and state; local organization; political methods and reform movements; police and health administration; public works; municipal ownership; public regulation of public utilities. The topics vary from year to year. Lectures; reading; special reports. *II*.

Professor FAIRLIE

105. SPECIAL TOPICS IN CONSTITUTIONAL LAW OF THE UNITED STATES.—Subject in 1912-13: judicial power over legislation. In succeeding years: (1) the development of federal power; (2) interstate commerce; (3) judicial interpretation of the Constitution of Illinois. Assistant Professor DODD

## PSYCHOLOGY

(See also PHILOSOPHY and EDUCATION.)

ISAAC MADISON BENTLEY, Ph.D., *Professor*

ARTHUR HOWARD SUTHERLAND, Ph.D., *Associate*

Students who do major work in psychology should take a minimum of six hours in philosophy, four of which will be counted as a part of the total number of hours required for the major in psychology. The courses specially advised are Philosophy 3 and 4.

Psychology 1 and 2 offer a continuous course and cannot be taken separately for credit. These courses are the prerequisites for all further courses in psychology. No student may do graduate work in psychology without having had these two introductory courses and at least three credit hours in philosophy.

### Honors

Candidates for honors in psychology must offer:

1. At least 24 semester hours in psychology, of which at least 6 shall be in the laboratory course and 6 in philosophy.

2. Two minors from the subjects listed below under groups (a) and (b). This selection must be so made that at least 15 hours shall be completed in some subjects taken from one of these groups, and at least 9 hours from some subject in the other of these groups.

These groups are as follows:

(a) Physics; physiology; zoology.

(b) Education; philosophy; sociology.

### COURSES FOR UNDERGRADUATES

1. INTRODUCTION TO PSYCHOLOGY.—The standpoint and the methods of psychology; the simple processes, attention and perception; mental inheritance, habit, custom, and fashion. Lectures; sectional meetings. *I*; (3). Professor BENTLEY, Dr. SUTHERLAND

*Prerequisite:* One year of university work.

2. INTRODUCTION TO PSYCHOLOGY (Continued).—Emotive and volitional complexes; association, memory, action and thought; the



relations of psychology to the biological and the social sciences; comparative and genetic psychology, and the psychology of the abnormal; applications of psychology to the arts and professions. [By special arrangement, students whose grading in the course is high may elect, during the second semester (in addition to course 2), experimental work in the laboratory (See course 3, below). The completion of Courses 1 and 2, or equivalent work, is necessary to the election of more advanced subjects offered by the department.] *II*; (3).

Professor BENTLEY, Dr. SUTHERLAND

3. LABORATORY PRACTICE.—Scientific method; classical experiments in the fields of sensation, affection, attention, and action. Laboratory practice; lectures; conferences; demonstrations. (Introductory to the pursuit of special problems and to psychological research.) *I or II*; (3).

Professor BENTLEY, Dr. SUTHERLAND

4. LABORATORY PRACTICE (Continued).—Experiments in memory, association, learning, and thought. (A part of the term may be devoted either to the metrical methods of psychophysics or to the solution of a small qualitative problem. *II*; (3).

Professor BENTLEY, Dr. SUTHERLAND

#### COURSES FOR UNDERGRADUATES AND GRADUATES

6. COMPARATIVE PSYCHOLOGY.—Mind in the various animal forms; the psychological implications of the bionomic doctrine of descent; a comparison of human and animal minds; criticism of current literature. (Recommended to students who intend to do advanced work either in animal psychology or in the study of behavior.) *I*; (2).

Professor BENTLEY

*Prerequisite:* Psychology 1, 2.

9. PHYSIOLOGICAL PSYCHOLOGY.—The physiology and psychology of the central nervous system. Lectures; laboratory. *I*; (2).

Dr. SUTHERLAND

*Prerequisite:* Psychology 1, 2.

12. MINOR PROBLEMS.—The formulation of methods suitable to new problems, and the conduct of small investigations. (At the discretion of the department, studies in the current literature or the presentation of essays upon historical subjects may be substituted for laboratory problems.) *I, II*; (2-5).

Professor BENTLEY, Dr. SUTHERLAND

*Prerequisite:* Psychology 1, 2, 3, 4.

## COURSES FOR GRADUATES

101. RESEARCH.—Advanced problems; theses offered for graduate degrees. *I, II.* Professor BENTLEY, Dr. SUTHERLAND

102. CONTEMPORARY LITERATURE.—Seminar meetings for the discussion of current topics considered in their historical setting. *I, II.* Professor BENTLEY, Dr. SUTHERLAND

113. PSYCHOLOGY OF THE ABNORMAL.—Defects of sensation; illusions and hallucinations; automatisms, trance states and hypnosis; suggestion and dreams; the subconscious; defects of speech; defects of emotion and volition; defects of memory and association; obsessions and impulsions; genius and insanity; temperament and personality. *II.* Dr. SUTHERLAND

## PUBLIC SPEAKING

(See RHETORIC.)

## RAILWAY ENGINEERING

WILLIAM FREEMAN MYRICK GOSS, M.S., D.Eng., *Director, Professor*

EDWARD CHARLES SCHMIDT, M.E., *Professor*

JOHN McBEATH SNODGRASS, B.S., *Assistant Professor, Railway Mechanical Engineering*

ALONZO MORRIS BUCK, M.E., *Assistant Professor, Railway Electrical Engineering*

FRANKLIN WALES MARQUIS, M.E., *Associate*

ARTHUR FRANCIS COMSTOCK, B.S., *Instructor, Railway Civil Engineering*

Railway Civil Engineering—Courses 31-50.

Railway Electrical Engineering—Courses 61-65.

Railway Mechanical Engineering—Courses 1-30.

## RAILWAY MECHANICAL ENGINEERING

1. LOCOMOTIVES.—The mechanics of the locomotive; problems relating to its operation; the engine and valve mechanism; counterbalancing; the determination of tractive effort; tonnage rating problems; the development of types. (The course is co-ordinated with courses 2 and 8.) *I; (2).* Professor SCHMIDT

*Prerequisite:* Theoretical and Applied Mechanics 9; Mechanical Engineering 3, 15, 16.

2. LOCOMOTIVE DESIGN.—Calculations and designs of engine and

boiler details; current standards and proportions. Drafting room systems. *I*; (3). Assistant Professor SNODGRASS

*Prerequisite:* Mechanical Engineering 3, 4, 5, 15, 16; Theoretical and Applied Mechanics 9; registration in Railway Engineering 1.

3. SHOPS AND AUXILIARY EQUIPMENT.—The design and equipment of railway shops and roundhouses; their management and organization, supplemented by shop visits; water purifying plants and pumping stations; air-brake equipment. *II*; (2).

Assistant Professor SNODGRASS

*Prerequisite:* Mechanical Engineering 3, 4; Chemistry 1b or 1a.

4. LOCOMOTIVE PERFORMANCE.—Locomotive boiler and engine performance; the influence upon performance of combustion rate, steam pressure, speed, cut-off and other valve relations, compounding, and superheating. *I*; (2). Assistant Professor SNODGRASS

*Prerequisite:* Theoretical and Applied Mechanics 8; Mechanical Engineering 3, 4, 5, 15, 16.

7. ADVANCED DESIGN.—Problems in locomotive and car design. *II*; (3). Professor SCHMIDT, Assistant Professor SNODGRASS

*Prerequisite:* Railway Engineering 2.

8. DYNAMOMETER CAR TESTS.—Investigation of train resistance and locomotive tractive effort, by the use of the railway test car in trains on the Illinois Central Railroad; discussion and exemplification of the application of the results to the determination of tonnage ratings. *I*; (2). Mr. MARQUIS

*Prerequisite:* Open to seniors in railway courses only.

10. SEMINAR.—Discussion of current topics and review of railway journals. Assigned topics and reports. *I, II*; (1).

Professor SCHMIDT, Assistant Professor BUCK, Assistant Professor SNODGRASS, Mr. COMSTOCK

*Prerequisite:* Open to seniors in railway courses only.

11. RAILWAY TESTS.—Train resistance on steam roads and work with the electric test car. (For students in other departments of the College of Engineering.) *II*; (2).

Assistant Professor BUCK, Assistant Professor SNODGRASS, Mr. MARQUIS

*Prerequisite:* Mechanical Engineering 3; Electrical Engineering 6.

30. THESIS.—Independent solution of some problem or investigation of some subject. The thesis may consist of a design or of an

original experimental investigation, or it may be the analysis and discussion of data already in existence. *II*; (3).

Professor SCHMIDT, Assistant Professor BUCK, Assistant Professor SNODGRASS, Mr. COMSTOCK

#### RAILWAY CIVIL ENGINEERING

31. RAILWAY YARDS AND TERMINALS.—The theory and practice of the proper location of frogs and switches; the design of yards to insure efficiency of operation; the details of track construction. *II*; (3). Mr. COMSTOCK

*Prerequisite:* Civil Engineering 4.

32. RAILWAY STRUCTURES.—The details of railway structures; problems in original design. *II*; (2). Mr. COMSTOCK

*Prerequisite:* Civil Engineering 4 and 5.

33. ECONOMIC THEORY OF RAILWAY LOCATION.—The influence of location upon the net earning power of a line of railway. *I*; (4).

Mr. COMSTOCK

*Prerequisite:* Civil Engineering 4; Theoretical and Applied Mechanics 7, 8.

35. SIGNAL ENGINEERING.—The general arrangement of automatic block signals on single and double track lines; interlocking systems for terminals; details of construction and of operation. *I*; (1). Mr. COMSTOCK

*Prerequisite:* Civil Engineering 4.

50. SEMINAR.—Discussion of current topics; review of railway journals; assigned topics and reports. *I, II*; (1).

Professor SCHMIDT, Assistant Professor SNODGRASS, Assistant Professor BUCK, Mr. COMSTOCK

#### RAILWAY ELECTRICAL ENGINEERING

61. TRACTION.—Electric railway equipment and practice. The work of the course is exemplified by the use of the electric test car owned by the department. (For students in electrical engineering or railway mechanical engineering.) *II*; (3).

Assistant Professor BUCK

*Prerequisite:* Theoretical and Applied Mechanics 8; Electrical Engineering 16, 6; or 3, 24.

63. RAILWAY LABORATORY AND ROAD TESTS.—Electrical laboratory problems and electric car and dynamometer car tests to deter-

mine train resistance and power consumption for electric cars and steam trains. *II*; (3). Assistant Professor BUCK

*Prerequisite:* Railway Engineering 64; Electrical Engineering 24.

64. ELECTRIC RAILWAY PRACTICE.—The types of electric railway systems and apparatus; the engineering problems met with in preliminary road location, in the selection of electrical equipment, and in its operation and maintenance. *I*; (3).

Assistant Professor BUCK

*Prerequisite:* Theoretical and Applied Mechanics 8; Electrical Engineering 5 and 24.

65. ELECTRIC RAILWAY PRACTICE.—The problem of steam road electrification. *II*; (3). Assistant Professor BUCK

*Prerequisite:* Railway Engineering 64.

#### COURSES FOR GRADUATES

Entrance upon graduate work in railway engineering presupposes the full undergraduate course in that subject.

102. LOCOMOTIVE DESIGN.—Modern practice concerning steam pressure, compounding, superheating. Director Goss

106. LOCOMOTIVE OPERATION.—Determination of train resistance and locomotive tractive effort; application of these and other matters in the establishment of tonnage ratings. Professor SCHMIDT

108. ELECTRIC RAILWAY PRACTICE.—The design, selection, operation, and maintenance of electric railway equipment; central station, sub-station, rolling stock, and line equipment.

Assistant Professor BUCK

110. RAILWAY LOCATION.—The effects of the location of a railway upon its earning capacity; the engineering and economic problems met with in original location, as well as in the relocation and reduction of grades of existing lines. Mr. COMSTOCK

#### RHETORIC

(See ENGLISH.)

#### ROMANCE LANGUAGES AND LITERATURE

THOMAS EDWARD OLIVER, Ph.D., *Professor*

DAVID HOBART CARNAHAN, Ph.D., *Associate Professor, Chairman*

JOHN DRISCOLL FITZ-GERALD, II, Ph.D., *Assistant Professor*

JEAN-BAPTISTE BECK, Ph.D., *Assistant Professor*

ARTHUR ROMEYN SEYMOUR, Ph.D., *Associate*

DAVID SIMON BLONDHEIM, Ph.D., *Associate*

OLIN HARRIS MOORE, A.M., *Instructor*

WILLIAM SAMUEL HENDRIX, A.M., *Assistant*

INGEBRIGHT LILLEHEI, A.M., *Assistant*

JAY KARL DITCHY, A.B., *Assistant*

## FRENCH

### Honors

Candidates for honors in French must offer:

1. A major in French.
2. One minor of at least 12 hours in Latin. This is to be in addition to three years of high school Latin.
3. One minor of at least 10 hours in one of the following subjects: German, excluding German 1 and 3; Spanish, excluding Spanish 1; Italian; English literature, excluding English 1; history; philosophy.

### COURSES FOR UNDERGRADUATES

1. **ELEMENTARY COURSE.**—Grammar; pronunciation; reading of simple modern authors; composition; conversation. *I, II; (4).*

Professor OLIVER, Dr. BLONDHEIM, Mr. MOORE, Mr. HENDRIX, Mr. LILLEHEI, Mr. DITCHY

2. **MODERN PROSE, POETRY, AND DRAMA.**—Rapid reading of modern authors; advanced syntax and composition. *I, II; (4).*

Associate Professor CARNAHAN, Assistant Professor FITZ-GERALD, Dr. BLONDHEIM, Mr. MOORE

*Prerequisite:* French 1.

3. **INTERMEDIATE PROSE COMPOSITION AND CONVERSATION.**—Conducted entirely in French, giving facility in idiomatic expression in writing and speaking. Reading; themes; talks upon France and French life. *I, II; (3).*

Dr. BLONDHEIM

*Prerequisite:* French 2.

NOTE: This course is required of those who expect the recommendation of the department to teach French.

4. **ADVANCED COMPOSITION.**—A continuation of French 3 with special emphasis upon advanced syntax. *I, II; (2).*

Assistant Professor BECK

*Prerequisite:* French 3.

22. **MODERN NOVEL AND DRAMA.**—The novel and drama in France

from the beginning of the nineteenth century to the present time. Lectures; reports on collateral reading. *I, II; (2).*

Dr. SEYMOUR

*Prerequisite:* French 2.

25. COURSE FOR TEACHERS.—The various methods of teaching French in this country and abroad; actual contact with class-room problems. *I, II; (1).*

Professor OLIVER and other members of the department

*Prerequisite:* Twenty-four hours' credit in French.

28. SENIOR THESIS.—(Intended primarily for candidates for honors in French, but open to other seniors.) *I; (2).*

Associate Professor CARNAHAN

#### ADVANCED COURSES FOR UNDERGRADUATES AND GRADUATES

10. GENERAL SURVEY OF FRENCH LITERATURE.—The literary masterpieces of France; the main currents of French literature from the beginning to the present time. *I, II; (3).*

Associate Professor CARNAHAN

*Prerequisite:* French 22 or 24.

23. FRENCH POETRY.—Lectures; reading; declamation; interpretation. (Conducted in French.) *I, II; (3).*

Assistant Professor BECK

*Prerequisite:* French 3, and 10 or 22 or 24.

24. SEVENTEENTH AND EIGHTEENTH CENTURIES.—The greater masterpieces of the seventeenth and eighteenth centuries in France. *I, II; (3).*

Professor OLIVER

*Prerequisite:* French 2.

#### COURSES FOR GRADUATES

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Before entering upon the study of the Romance languages for an advanced degree, the candidate should have had a total of at least thirty hours of college work in these languages. Eighteen of these hours must be in one of the three languages, French, Italian, or Spanish, but no candidate will be received who has not had at least twelve hours of French. In addition a candidate should have good training in Latin, and be able to read ordinary German prose.

102. OLD FRENCH READINGS.—*First Semester:* Chrétien de Troyes and the court epic. *Second Semester:* Readings from Marie de France, the prose chroniclers, and the dramatists of the middle ages. *Twice a week; I, II.*

Professor OLIVER

108. VULGAR LATIN AND MEDIEVAL LATIN.—The development of

the Latin language, spoken and written, from the earliest times to the Carolingian epoch. (Conducted in French.) *Twice a week; I.*

Assistant Professor BECK

109. HISTORY OF FRENCH LITERATURE IN THE MIDDLE AGES, FROM THE NINTH TO THE FOURTEENTH CENTURY.—(Conducted in French.) *Twice a week; II.*

Assistant Professor BECK

[110. OLD PROVENÇAL.—The language and literature. (Conducted in French.) *Twice a week; I, II.* Not given in 1912-13.

Assistant Professor BECK]

[112. INTRODUCTION TO ROMANCE PHILOLOGY.—Phonology. *Twice a week; I.* Not given in 1912-13.

Assistant Professor FITZ-GERALD]

113. INTRODUCTION TO ROMANCE PHILOLOGY.—Morphology. *Twice a week; I.*

Assistant Professor FITZ-GERALD

115. FRENCH LITERARY CRITICISM.—History of criticism in antiquity and in the Italian Renaissance; the work of the principal French critics; the seventeenth and nineteenth centuries; development of classicism and romanticism. *Once a week; I, II.*

Dr. BLONDHEIM

125. SEMINAR.—Research in Old French literature. *Twice a week; I, II.*

Associate Professor CARNAHAN

## ITALIAN

### COURSES FOR UNDERGRADUATES

1. ELEMENTARY COURSE.—Grammar; composition; conversation; reading of simple modern authors. *I, II; (3).*

Mr. MOORE

*Prerequisite:* One year of university work in French, Spanish, or Latin.

2. LITERARY COURSE.—*First semester:* Rapid reading from the works of the Italian writers of the nineteenth century. *Second semester:* Dante; Petrarch; Boccaccio. *I, II; (2).*

Mr. MOORE

*Prerequisite:* Italian I.

## SPANISH

### COURSES FOR UNDERGRADUATES

1. ELEMENTARY COURSE.—Grammar; pronunciation; easy reading; composition; conversation. *I, II; (4).*

Dr. SEYMOUR, Mr. HENDRIX, Mr. DITCHY

2. CONVERSATION AND COMPOSITION.—Conversation; composition;



reading of modern prose. The vocabulary of everyday life is emphasized. Commercial correspondence. *I, II; (3).* Dr. SEYMOUR

*Prerequisite:* Spanish 1.

3. GENERAL INTRODUCTION TO SPANISH LITERATURE.—Rapid reading of selected works of representative modern authors, and of the more important writers of the seventeenth century. *I, II; (2).*

Mr. HENDRIX

*Prerequisite:* Spanish 1.

4. ADVANCED CONVERSATION AND COMPOSITION.—Commercial correspondence; reading of commercial Spanish. (Conducted in Spanish.) *I; (2).*

Dr. SEYMOUR

*Prerequisite:* Spanish 2.

## SCANDINAVIAN LANGUAGES AND LITERATURE

(See GERMANIC LANGUAGES AND LITERATURE.)

## THE SOCIAL SCIENCES

(See ECONOMICS, HISTORY, POLITICAL SCIENCE, and SOCIOLOGY.)

## SOCIOLOGY

EDWARD CARY HAYES, Ph.D., *Professor*

ARTHUR JAMES TODD, Ph.D., *Associate*

### *Honors*

For honors in sociology twenty-four hours in the major subject are required, including Sociology 1, 3, 8, and 9.

The minor subjects may be selected, with the approval of this department, from the following: history, economics, political science, philosophy, and psychology. All candidates must have taken elementary psychology.

### COURSES FOR UNDERGRADUATES

1. THE PRINCIPLES OF SOCIOLOGY.—The method and the degree in which society molds the lives of its members; the nature of such social realities as customs, institutions, organizations, social classes, and castes; changes to which the social realities are subject, and their causes; the effects of geographic conditions, of the forms and distribution of property, of inherited and acquired traits of the population, and of prevalent social activities upon each other; order; progress. *I; (3).*

Professor HAYES

*Prerequisite:* Junior standing, including if possible the principles of economics and elementary psychology.

## 7. THE SOCIAL PROBLEMS OF THE RURAL COMMUNITY.—II; (2).

Professor HAYES

*Prerequisite:* Junior standing.

## ADVANCED COURSES FOR UNDERGRADUATES AND GRADUATES

3. SOCIAL EVOLUTION.—Modes of social activity among people at different stages of progress: savage, barbarous, and civilized; family organization, practical arts, economic wants and institutions, origins of government and law, codes of morality, religions; inductions from such facts, as to the theory of social evolution and the method of progress. II; (3).

Professor HAYES

*Prerequisite:* Sociology 1.

[6. THE SOCIAL PROBLEMS OF THE URBAN COMMUNITY.—II; (3).  
Not given in 1912-13.

Professor HAYES

*Prerequisite:* Senior standing and Sociology 1.]

8. GENERAL CHARITIES.—Evolution of modern organized philanthropy, public and private; causes and prevention of poverty; organization and management of charitable institutions. I; (3).

Dr. TODD

*Prerequisite:* Junior standing and Sociology 1 or Economics 1.

9. CRIMINOLOGY.—Nature, causes, and treatment of the criminal; evolution of modern methods of criminal procedure and penology; recent experiments and tendencies. II; (3).

Dr. TODD

*Prerequisite:* Senior standing.

10. POPULATION.—Theories and policies of population; Malthus' Principle and its critics; problems in population of the United States; immigration, race-mixture, conditions affecting public health, death-rate, birth-rate, "race-suicide", marriage, divorce; selective influences at work on the "Population type". I; (3).

Dr. TODD

*Prerequisite:* Senior standing and Sociology 1 or Economics 1.

11. PRINCIPLES OF SOCIOLOGY.—Fundamental principles and main teachings of sociology, derived from a minute analysis and classification of the elements that make up the life of a people, types of change to which they are subject, and causes by which they are affected. I; (3).

Professor HAYES

*Prerequisite:* Senior standing.

12. THE LABOR PROBLEM.—The same as Economics 12.

*Prerequisite:* Economics 1, 3; students who are taking sociology as a major and have had 6 hours in history, and Sociology 1, may be admitted without Economics 3.

[15. THE FAMILY.—Evolution of the family and marriage; education, moral, and political significance of the family at different stages of social development. II; (3). Not given in 1912-13.

Dr. TODD

*Prerequisite:* Primarily for graduates, but approved seniors who have had Sociology I or equivalent may be admitted; reading knowledge of French or German desirable.]

21. SOCIALISM AND SOCIAL REFORM.—The same as Economics 21.

*Prerequisite:* Economics 1, 3; students who are taking sociology as a major and have had 6 hours in history, and Sociology 1, may be admitted without Economics 3.

26. SOCIAL EDUCATION.—Education as a factor in social progress; present day education policy and organization in the light of theoretical and applied sociology. II; (3).

Dr. TODD

*Prerequisite:* Senior standing, and Sociology 1 or Psychology 1 or equivalent.

#### COURSES FOR GRADUATES

Graduate work in sociology presupposes training in the social sciences, at least in economics and history, and also in psychology. Candidates for the doctor's degree with sociology as the major subject will be expected to have taken some fundamental course in economics and in political science, such as Economics 101 or 122, and Political Science 102.

The graduate courses in this department are of two classes: Those of the first class deal with the principles of general sociology; these principles relate to the essential nature, methods of evolution, and types of determining causes, of customs, institutions, and the other social forms whether they serve economic, political or other purposes. The courses of the second class treat, in the light of the principles of general sociology, those practical social problems which lie outside the range of economics and politics.

The library has most of the standard works in general sociology by American, English, and European authorities, a collection of books on each of the various sociological problems, and an extensive list of periodicals. Special attention is given to ethnographic and anthropologic materials.

101. SOCIOLOGICAL METHOD.—The method of advancing the science of sociology; adaptability to sociological investigation of certain methods described in Pearson's *Grammar of Science*, Wundt's *Methodenlehre*, zweite abtheilung, Seignobos' *La Méthode Historique*

*Appliquée aux Sciences Sociales*, Bernheim's *Historische Methode*, Spencer's *Study of Sociology*, and Giddings' *Inductive Sociology*. *Three times a week; I.*

Professor HAYES

102. THE DEVELOPMENT OF SOCIOLOGY.—Readings in the works of writers who have contributed most to the development of sociology; discussions; supplementary lectures. Arranged in a cycle of three years: first year, authors whose works can be read in English; second year, German authors; third year, mainly French writers. (Second year given in 1912-13.) *One session, two hours, each week; I, II.*

Professor HAYES

150. SEMINAR.—*Three to six hours a week; I, II.*

Professor HAYES

## SPANISH

(See ROMANCE LANGUAGES AND LITERATURE.)

## VETERINARY SCIENCE

DONALD MCINTOSH, V.S., *Professor*

[2. VETERINARY MATERIA MEDICA.—All the agents used for the cure of disease and injury, and for the preservation of health among domestic animals. Lectures; text-books, inspection of specimens of drugs. *I, II; (5).* Not given in 1912-13.

Professor MCINTOSH]

4. ANATOMY, PHYSIOLOGY, AND DISEASES OF DOMESTIC ANIMALS.—The organs of mastication, digestion, respiration; circulation, and lymphatic system; the urinary organs; the skin. *I; (5).*

Professor MCINTOSH

5. ANATOMY, PHYSIOLOGY, AND DISEASES OF DOMESTIC ANIMALS.—The nervous system, bones, joints, feet, eye, and generative organs; epizootic and contagious diseases; catarrhal fever; pyemia; septicæmia; rheumatism; tuberculosis; fistula of the withers; poll-evil; wounds; internal parasites. *II; (5).*

Professor MCINTOSH

6. CLINIC.—The free clinic is held every Saturday morning from ten to twelve o'clock. Animals are brought to be examined, operated upon, and prescribed for. This class is of signal benefit to the student as he has the opportunity of seeing the cases and of assisting in the work. *I, II; (1).*

Professor MCINTOSH

*Prerequisite:* Registration in Veterinary Science 4 and 5.

## ZOOLOGY

(See also ENTOMOLOGY, BOTANY, and PHYSIOLOGY.)

HENRY BALDWIN WARD, Ph.D., *Professor*

FRANK SMITH, A.M., *Associate Professor*

CHARLES ZELENY, Ph.D., *Associate Professor*

FREDERICK WALTON CARPENTER, Ph.D., *Assistant Professor*

CHARLES CHRISTOPHER ADAMS, Ph.D., *Associate*

ERNEST CARROLL FAUST, A.B., *Research Assistant*

BESSIE ROSE GREEN, A.M., *Assistant*

JOHN EARL GUTBERLET, A.M., *Assistant*

HARLEY JONES VANCLEAVE, M.S., *Assistant*

\*MARGARET WALLACE TAGGART, M.S., *Graduate Assistant*

PANZY LOUISE BARGER, B.S., A.M., *Graduate Assistant*

ROYAL GLENN HALL, A.B., *Graduate Assistant*

RALPH HARLAN LINKINS, A.B., *Graduate Assistant*

HORACE WESLEY STUNKARD, B.S., *Graduate Assistant*

JUNE MAUD ASHLEY, A.B., *Graduate Assistant*

\*\*ALICE DOROTHEA BROOKS, A.B., *Graduate Assistant*

Courses 1 and 2 constitute a general survey of the subject, involving a year's work, and form the best introduction to later work in zoology. In the second year, a student may choose as a line of work, either morphological, experimental, ecological, faunistic, or systematic courses. The courses on microscopical technique (3) and current literature (20) are of value in all lines of work. Medical students should take courses 3 and 6 in the second year. Those preparing to teach zoology in the high school will find field zoology (16, 17) and ecology (9) of especial value, and should not overlook the importance of a course in general entomology.

The equipment of the department includes the usual apparatus, microscopes, micromes, paraffin baths, demonstration material, and reagents. The various special laboratories are equipped with special apparatus and demonstration material in accordance with their particular needs. Provision is made for meeting such special demands as may arise in connection with individual work.

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\* Resigned Nov. 1st, 1912.

\*\* From Nov. 1st, 1912.

The University Museum contains series of mounted vertebrates, of Ziegler embryological models, and of alcoholic material in all groups; these are available as needed for either teaching or research. The collections and library of the Illinois State Laboratory of Natural History are freely accessible to advanced students. They are rich in that which pertains to fresh-water biology. The private library and collections of the head of the department, which contain much material on invertebrate morphology and on parasitism, are also placed at the disposal of graduate students.

#### COURSES FOR GRADUATES

1. GENERAL ZOOLOGY.—Animal biology; general principles of structure; function and inter-relation of animal forms; origin and development of animal life; the simpler and best-established generalizations in zoological theory. Lectures; laboratory; quiz work. *I, or II; (5).*

Professor WARD, Associate Professor ZELNY, Dr. ADAMS, and assistants

2. VERTEBRATE ZOOLOGY AND COMPARATIVE ANATOMY.—Classification of the Chordata; the early stages of vertebrate embryology; structure of vertebrate tissues; systems of organs considered in respect to their anatomy, function, ontogeny, and evolution in the vertebrate series; anatomical studies of selected types of the Chordata. Lectures; laboratory; quiz work. *II; (5).*

Assistant Professor CARPENTER

*Prerequisite:* Zoology 1.

16. FIELD ORNITHOLOGY.—The birds of the vicinity. Identification; food relations; seasonal distribution; migration activities. (Students are advised to provide themselves with opera or field glasses.) Field work; lectures. *II; (2).*

Associate Professor SMITH

19. ADVANCED ORNITHOLOGY.—(Continuation of 16). Difficult groups of birds; economic and technical literature. *I, II; (2 to 5).*

Associate Professor SMITH

*Prerequisite:* Zoology 16 or equivalent.

#### COURSES FOR GRADUATES AND UNDERGRADUATES

3. MICROSCOPICAL TECHNIQUE AND GENERAL VERTEBRATE EMBRYOLOGY.—Theory and practice of microscopical technique; vertebrate embryos in early stages of development; methods of fixation, embedding, section cutting, staining, and mounting; preparation of

embryological material for use in introductory embryology. Lectures; laboratory. *I*; (3). Assistant Professor CARPENTER

*Prerequisite:* Zoology 1, 2.

6. VERTEBRATE ORGANOGENY.—Development of the organs of the vertebrate body. Lectures; assigned readings in a text-book of human embryology; laboratory studies on embryos of the chick and pig. (A continuation of Course 3; for medical students and others.) *II*; (3). Assistant Professor CARPENTER

*Prerequisite:* Zoology 1, 2, 3.

9. ANIMAL ECOLOGY.—The relation of animals to their natural environment; processes of change in environment and their influence upon animal life; the local fauna and the conditions under which it lives; methods of observation, making notes, and collections. Insects, mollusks, reptiles, amphibians, and fishes. Field work; laboratory; assigned reading; reports. *II*; (5).

Dr. ADAMS

*Prerequisite:* One year of zoology or two years of university work, including Zoology 1.

11. PRINCIPLES OF ZOOGEOGRAPHY.—The geographic distribution of animals, particularly the faunas of North America and of Illinois; the fauna in its relation to the complete environment (climate, physiography, geology, vegetation) and from the standpoint of its origin and its dynamic relations. Lectures; laboratory work on maps; field excursions. *I*; (3 or 5). Dr. ADAMS

*Prerequisite:* As in Zoology 9.

13. EXPERIMENTAL EMBRYOLOGY AND REGENERATION.—The factors concerned in individual development. Lectures; demonstrations. *I*; (2). Associate Professor ZELENY

*Prerequisite:* Two years of university work, including one year in zoological courses.

13a. EXPERIMENTAL EMBRYOLOGY AND REGENERATION.—(Laboratory.)—Individual work on definite problems. *I, II*; (1 to 5).

Associate Professor ZELENY

*Prerequisite:* Two years of university work, including one year in zoological courses.

15. VARIATION AND HEREDITY.—The factors of organic evolution; the principles of animal breeding; eugenics. Lectures and demonstrations. *II*; (2). Associate Professor ZELENY

*Prerequisite:* Two years of university work, including one year in zoological courses.

15a. VARIATION AND HEREDITY.—(Laboratory.)—Individual work on definite problems. *I, II; (1 to 5).*

Associate Professor ZELNY

*Prerequisite:* Two years of university work, including one year in zoological courses.

17. FIELD ZOOLOGY.—The animal life of a restricted locality. Collection, preservation, and identification of various kinds of animals; observations on the habits and life histories of selected forms. *I; (3).*

Associate Professor SMITH

*Prerequisite:* One year of zoology, or two years of university work, including Zoology 1.

18. ADVANCED FIELD ZOOLOGY.—More restricted problems in connection with the local fauna; taxonomic or distributional problems. (A continuation of courses 16 and 17.) *I, II; (3 to 5).*

Associate Professor SMITH

*Prerequisite:* Zoology 17.

7. STRUCTURE OF THE CENTRAL NERVOUS SYSTEM OF VERTEBRATES.—The more important anatomical and histological characters of the vertebrate brain and spinal cord; the grouping of neurones into functional systems with special reference to the higher vertebrates, including man. Lectures; demonstrations. *I; (2).*

Assistant Professor CARPENTER

*Prerequisite:* One year of zoology.

29. ADVANCED ANIMAL ECOLOGY.—Special problems in ecology, distribution, and faunas, with reference to the interpretation of the relation between animals and their environments. Conferences; laboratory; field work. *I, II; (2 to 5).*

Dr. ADAMS

*Prerequisite:* Two years of university work, including Zoology 1 and 9 or 11.

21. INTRODUCTION TO ZOOLOGICAL RESEARCH.—Investigation of topics, usually repeating the work of earlier investigators; the morphology, life history, or reciprocal relations of invertebrate forms. Laboratory; conferences; assigned reading. *I, II; (2 to 5).*

Professor WARD

*Prerequisite:* One year in zoological courses.

20. CURRENT LITERATURE.—Meetings of the instructors and advanced students of the department for the presentation and discussion of the results of recent zoological investigation. (Open to



all students of zoology; should be taken by those intending to graduate with a thesis.) *I, II; (1).*

Associate Professor ZELENY, Assistant Professor CARPENTER

*Prerequisite:* Three years of university work, including one year in zoology.

8. THESIS INVESTIGATION.—Individual work on assigned topics. *I, II; (5).*

Professor WARD, Associate Professor SMITH, Associate Professor ZELENY, Assistant Professor CARPENTER, Dr. ADAMS

*Prerequisite:* Two years in zoological courses.

#### COURSES FOR GRADUATES ONLY

Two years of undergraduate work in zoology are ordinarily presupposed for entering upon graduate study in the department. When the work is chosen for a minor the courses listed for graduates and undergraduates, to be acceptable, must be preceded by at least one full year's undergraduate work in zoology. Work done at other institutions will be valued on conference with the head of the department.

103. HISTOLOGY OF THE NERVOUS SYSTEM.—The nervous elements of invertebrates and vertebrates: their form, composition, and topographical relations; the evidence for and against the neurone theory of nervous structure. Conferences; assigned readings; laboratory. *Twice a week; I, II.* Assistant Professor CARPENTER

107. PARASITOLOGY.—Structure and life history of animal parasites; their relations to disease; origin and biological significance of parasitism. Conferences; assigned readings; demonstrations. *Twice a week; I, II.* [Given in 1912-13 and in alternate years.]

Professor WARD

113. EXPERIMENTAL ZOOLOGY.—Assigned problems in experimental embryology, regeneration, variation, and heredity. *Two to five times a week; I, II.* Associate Professor ZELENY

117. FAUNISTIC ZOOLOGY.—Problems in taxonomy, distribution, and ecology; field work, conference, and lectures. This work is favored by a natural history survey of the State now in progress at the University; students have the advantage of the collections, library, apparatus, and operations of this survey. *Twice a week; I, II.* Associate Professor SMITH, Dr. ADAMS

## 121. INDIVIDUAL RESEARCH COURSES.—

(a) Zoological problems. Professor WARD

(b) Faunistic and systematic zoology.

Associate Professor SMITH

(c) Animal Ecology and Zoogeography. Dr. ADAMS

(d) Vertebrate Embryology. Assistant Professor CARPENTER

(e) Structure and Development of the Nervous System.

Assistant Professor CARPENTER

(f) Experimental Zoology. Associate Professor ZELENY

[127. THEORIES OF ANIMAL PHYLOGENY.—Relations of various groups of animals; significance of so-called intermediate forms; study of invertebrate larval forms and of theories of descent based on them. Lectures; assigned readings; laboratory. *I, II*. Given in 1913-14 and in alternate years. Professor WARD]

**PART IV**  
**AUXILIARY SCIENTIFIC BUREAUS**



# THE AGRICULTURAL EXPERIMENT STATION

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EDMUND JANES JAMES, Ph.D., LL.D., PRESIDENT

## STAFF

EUGENE DAVENPORT, M.Agr., LL.D., *Director*  
CYRIL GEORGE HOPKINS, Ph.D., *Vice-Director*  
STEPHEN ALFRED FORBES, Ph.D., *Consulting Entomologist*  
DONALD MCINTOSH, V.S., *Consulting Veterinarian*  
HENRY LEWIS RIETZ, Ph.D., *Statistician*  
BURT EARDLEY POWELL, Ph.D., *Editor Agricultural Press Bulletins*  
ANNA CUSHMAN GLOVER, *Assistant Secretary*

## *In Agronomy*

CYRIL GEORGE HOPKINS, Ph.D., *Chief, Agronomy and Chemistry*  
JEREMIAH GEORGE MOSIER, B.S., *Chief, Soil Physics*  
LOUIE HENRIE SMITH, Ph.D., *Chief, Plant Breeding*  
JAMES HARVEY PETTIT, Ph.D., *Chief, Soil Fertility*  
LEONARD HEGNAUER, B.S., *Chief, Crop Production*  
JEROME EDWARD READHIMER, B. S., *Superintendent Soil Experiment Fields, with rank of Assistant Professor*  
\*WILLIAM GEORGE ECKHARDT, B.S., *Associate, Soil Fertility*  
AXEL FERDINAND GUSTAFSON, M.S., *Associate, Soil Physics*  
ERNEST VAN ALSTINE, B.S., *Associate, Chemistry*  
JOSEPH PAUL AUMER, B.S., *Associate, Chemistry*  
ORA STANLEY FISHER, B.S., *Associate, Soil Fertility*  
CLARENCE CHESTER LOGAN, B.S., *Associate, Soils Extension*  
JAY BOARDMAN PARK, M.S., *Associate, Plant Breeding*  
SIDNEY VIEL HOLT, B.S., *Associate, Soil Physics*  
HAROLD WILSON STEWART, B.S., *Associate, Soil Physics*  
HENRY CLYDE WHEELER, B.S., *Associate, Soil Physics*  
GERTRUDE NIEDERMAN, B.S., *Assistant, Chemistry*  
JOHN EZRA WHITCHURCH, B.S., *Associate, Soil Fertility*  
EZEKIEL EDWARD HOSKINS, B.S., *Associate, Soil Fertility*

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\*On leave.

WILLIAM LEONIDOS BURLISON, M.S., *Associate, Crop Production*  
WARD HANSON SACHS, B.S., *First Assistant, Chemistry*  
WALTER BYRON GERNERT, Ph.D., *First Assistant, Plant Breeding*  
ALBERT LEMUEL WHITING, Ph.D., *First Assistant, Soil Biology*  
FREDERICK CHARLES BAUER, B.S., *First Assistant, Soil Fertility*  
FREDERICK MARTIN WILLIAM WASCHER, B.S., *Assistant, Soil Physics*

FORREST ADDISON FISHER, B.S., *Assistant, Soil Physics*  
FRANK WILLIAM GARRETT, B.S., *Assistant, Soil Fertility*  
WILBUR ROY LEIGHTY, B.S., *Assistant, Chemistry*  
ORR MILTON ALLYN, B.S., *Assistant, Crop Production*  
ROBERT WILLIAM DICKENSON, B.S., *Assistant, Soil Physics*  
CLIFFORD E WHEELOCK, B.S., *Assistant, Soil Physics*  
JOHN WOODARD, B.S., *Assistant, Soil Physics*  
ORAN KELLER, B.S., *Assistant, Chemistry*  
LEO ROSS BINDING, B.S., *Assistant, Chemistry*

#### *In Animal Husbandry*

HERBERT WINDSOR MUMFORD, B.S., *Chief*  
HARRY SANDS GRINDLEY, D.Sc., *Chief, Animal Husbandry*  
LOUIS DIXON HALL, M.S., *Assistant Chief, Animal Husbandry*  
WALTER CASTELLA COFFEY, M.S., *Assistant Chief, Sheep Husbandry*  
ARTHUR DONALDSON EMMETT, A.M., *Assistant Chief, Animal Nutrition*  
EDWIN STANTON GOOD, M.S., *Assistant Chief, Swine Husbandry*  
JOHN A DETLEFSEN, D.Sc., *Assistant Chief, Genetics*  
HENRY PERLY RUSK, M.S.A., *First Assistant, Beef Cattle*  
JAMES LLOYD EDMONDS, B.S., *First Assistant, Horse Husbandry*  
HAROLD HANSON MITCHELL, B. S., *Assistant, Chemistry*  
WALTER EDWARD JOSEPH, Ph.D., *Assistant, Animal Husbandry*  
WILLIAM HERSCHEL SMITH, M.S., *Assistant, Animal Husbandry*  
SLEETER BULL, M.S., *Assistant, Animal Nutrition*  
LEONORA PERRY, A.B., B.L.S., *Editorial Assistant*  
WALTER F HANDSCHIN, *Assistant, Animal Husbandry*  
JOHN JONATHAN YOKE, *Assistant, Animal Husbandry*  
VIRGIL AUGUSTUS PLACE, B.S., *Assistant, Animal Husbandry*  
HAROLD CLAYTON M CASE, B.S., *Assistant, Animal Husbandry*  
WILBUR JEROME CARMICHAEL, *Assistant, Animal Husbandry*  
JOHN RICHARD WELLS, B.S., *Assistant, Animal Husbandry*

*In Dairy Husbandry*

WILBUR JOHN FRASER, M.S., *Chief, Dairy Husbandry*  
NELSON WILLIAM HEPBURN, M.S., *First Assistant, Dairy Manufactures*  
WALTER LEE GAINES, M.S., *Associate, Dairy Husbandry*  
ROYDEN EARL BRAND, M.S., *Associate, Dairy Husbandry*  
HORATIO NEWTON PARKER, *First Assistant, Municipal and Sanitary Dairying*  
JESSE MELANTHON BARNHART, M.S., *Assistant, Chemistry*  
LEROY LANG, M.S., *Assistant, Dairy Manufactures*  
WILLIAM TRUMAN CRANDALL, B.S., *Assistant, Milk Production*  
RAY STILLMAN HULCE, B.S., *Assistant, Milk Production*  
OLIVER ARNOLD KELLER, B.S., *Assistant, Dairy Manufactures*  
HARRISON AUGUST RUEHLE, B.S., *Assistant, Dairy Manufactures*  
FRANK ASHMORE PEARSON, B.S., *Assistant, Dairy Husbandry*  
LESLIE M WAKELEY, B.S., *Assistant, Dairy Husbandry*  
WILLIAM FIRTH WELLS, B.S., *Assistant, Municipal Dairying*

*In Horticulture*

JOSEPH CULLEN BLAIR, M.S.A., *Chief*  
CHARLES SPENCER CRANDALL, M.S., *Chief, Plant Breeding*  
JOHN WILLIAM LLOYD, M.S.A., *Chief, Olericulture*  
HERMAN BERNARD DORNER, B.S., *Assistant Chief, Floriculture*  
BETHEL STEWART PICKETT, M.S., *Assistant Chief, Pomology*  
OSCAR S WATKINS, B.S., *Assistant Chemist, Horticulture*  
ERNEST WINFIELD BAILEY, M.S., *Assistant, Plant Breeding*  
ARNO H NEHRLING, *Assistant, Floriculture*  
WARREN ALBERT RUTH, M.S., *Assistant, Horticultural Chemistry*  
CHARLES ELMER DURST, B.S., *Assistant, Olericulture*  
THOMAS BREGGER, B.S., *Assistant, Plant Breeding*  
LAWRENCE EARL FOGLESONG, B.S., *Assistant, Pomology*  
ALFRED JOSEPH GUNDERSON, B.S., *Assistant, Pomology*  
SIMEON JAMES BOLE, A.M., *Assistant, Plant Breeding*  
FRED WEAVER MUNCIE, A.B., *Assistant, Floriculture*  
GEORGE L PELTIER, A.M., *Assistant, Floricultural Pathology*  
JOHN JOSEPH GARDNER, B.S.A., *Assistant, Pomology*  
JAMES HUTCHINSON, *Assistant, Floriculture*

*In Botany*

JAMES THEOPHILUS BARRETT, Ph.D., *Chief Assistant, Botany*

By an act approved March 2, 1887, the national government appropriated \$15,000 per annum to each state for the purpose of establishing and maintaining, in connection with the colleges founded upon the congressional act of 1862, agricultural experiment stations, "to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science." Under this provision the *Agricultural Experiment Station* for Illinois was founded in 1888 and placed under the direction of the Trustees of the University; a part of the University farm, with buildings, was assigned for its use.

The Federal grants to the Station have been supplemented by State appropriations, until its revenues have become larger than those of any other similar institution in the world.

Investigations are conducted in the growing and marketing of orchard fruits, the methods of production of meats and of dairy goods, the principles of animal breeding and of nutrition, and the improvement and the economic production of crops. All the principal types of soil of the State are being studied in the laboratory under glass and in the field. A soil survey is in progress which when finished will map and describe the soil of every farm of the State down to an area of ten acres. Twenty to thirty fields and orchards are rented in various portions of the State for the study of local problems, and assistants are constantly on the road for the conduct of experiments or to give instruction to producer or consumer. The results of investigation are published in bulletins, which are issued in editions of 50,000 and distributed free of charge.

Much of this work is of interest to students, especially of graduate grade, and it is freely available for this purpose, so far as is consistent with the interests of the Station.



# THE ENGINEERING EXPERIMENT STATION

---

EDMUND JANES JAMES, Ph.D., LL.D., PRESIDENT

## STAFF

WILLIAM FREEMAN MYRICK GOSS, M.S., D.Eng., *Director*

TRYGVE D YENSEN, M.S., *Administrative Assistant*

THE HEADS OF THE DEPARTMENTS IN THE COLLEGE OF ENGINEERING

## SPECIAL INVESTIGATORS

HERBERT FISHER MOORE, M.M.E., *Assistant Professor in the Department of Theoretical and Applied Mechanics*

DUFF ANDREW ABRAMS, C.E., *Associate in the Department of Theoretical and Applied Mechanics*

FRANKLIN WALES MARQUIS, M.E., *Associate in the Department of Railway Engineering*

DAVID FORD MCFARLAND, A.M., M.S., Ph.D., *First Assistant in the Department of Chemistry*

WILLIS APPLEFORD SLATER, M.S., C.E., *First Assistant in the Department of Theoretical and Applied Mechanics*

TRYGVE D YENSEN, M.S., *Assistant in the Department of Electrical Engineering*

JOHN NICHOLAS VEDDER, A.M., *Assistant in the Department of Mechanical Engineering*

HAROLD HOUGHTON DUNN, B.S., *Assistant in the Department of Railway Engineering*

ALONZO PLUMSTED KRATZ, M.S., *Assistant in the Department of Mechanical Engineering*

## RESEARCH FELLOWS

WILLARD CLARKE EELS, B.S., *Theoretical and Applied Mechanics*

HAROLD ALLEN HOUSTON, B.S., *Railway Engineering*

MAYNE SEGUINE MASON, B.S., *Electrical Engineering*

WILLIAM EARL MOSHER, M.E., *Mechanical Engineering*

HARRY FIELDING HADLEY, A.M., *Chemistry*

RUDOLPH McDERMET, B.S., *Electrical Engineering*

GEORGE ALFRED MANEY, C.E., *Theoretical and Applied Mechanics*

JOHN WILLIAM STOKES, B.S., *Electrical Engineering*

HOWARD RICE THOMAS, C.E., *Theoretical and Applied Mechanics*

WALTER JACOB WOHLBERG, B.S., *Mechanical Engineering*

The Engineering Experiment Station was established by action of the Board of Trustees, December 8, 1903. Its purposes are the stimulation and elevation of engineering education, and the study of problems of special importance to professional engineers and to the manufacturing, railway, mining, and industrial interests of the State and the country. The practical nature of the investigations and their adaptation to present-day needs are assured by means of conferences with committees of the leaders of the State's industrial activities.

The control of the Station is vested in the heads of the several departments of the College of Engineering. These constitute the Station Staff, and, with the Director, determine the character and extent of the investigations to be undertaken.

Up to the present time, sixty bulletins of value to engineering science have been published. The experiments have related chiefly to tests of high-speed tool steels; the resistance of tubes to collapse; the holding power of railroad spikes; the effect of scale on heat transmission; roof trusses; base and bearing plates in columns and beams; stresses in chain links; extensions of the Dewey decimal system of classification; tests of electric lamps; lighting country homes by private electric plants; street lighting; high steam pressures in locomotive service; rate of formation of carbon monoxide in gas producers; fuel tests; the weathering of coal and the spontaneous combustion of coal; thermal conductivity of fire-clay; heat transmission; freight train resistance; tests of a suction gas producer; tests of concrete; reinforced concrete beams and columns; tests of cast-iron and reinforced concrete culvert pipe; tests of brick columns and terra cotta block columns; tests of timber beams; tests of built-up columns under load; tests to determine the resistance to flow through locomotive water columns; tests of nickel-steel riveted joints; strength of rolled zinc; inductance of coils; mechanical stresses in transmission lines; starting currents of transformers; superheated steam in locomotive service; a new analysis of the cylinder performance of reciprocating engines; effects of cold weather upon train resistance and tonnage rating; and coking of coal at low temperatures.

# THE STATE LABORATORY OF NATURAL HISTORY

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EDMUND JANES JAMES, Ph.D., LL.D., PRESIDENT

## STAFF

STEPHEN ALFRED FORBES, Ph.D., LL.D., *Director*

CHARLES ARTHUR HART, *Systematic Entomologist*

MARY JANE SNYDER, *Secretary*

ROBERT EARL RICHARDSON, A.M., *Assistant in charge of Biological Station*

In 1885 the General Assembly passed a bill transferring the *State Laboratory of Natural History* from the Illinois State Normal University to the University of Illinois. This laboratory was created for the purpose of making a natural history survey of the State, the results of which should be published in a series of bulletins and reports; and for the allied purpose of furnishing specimens illustrative of the flora and fauna of the State to the public schools and to the State museum. For these purposes direct appropriations are made by the legislature from session to session. Material of all classes has been collected in all part of the State, field observations and experiments have been conducted, extending over many years, and twelve volumes have been published in the form of bulletins and final reports.

The principal problem upon which the work of the survey is at present concentrated is that of the effect upon our aquatic biology of a pollution of our natural waters.

# THE STATE ENTOMOLOGIST'S OFFICE

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## STAFF

STEPHEN ALFRED FORBES, Ph.D., LL.D., *State Entomologist*  
CHARLES ARTHUR HART, *Systematic Entomologist*  
WESLEY PILLSBURY FLINT, *Assistant for Central Illinois*  
LINDLEY MALCOLM SMITH, B.S., *Assistant for Southern Illinois*  
DAVID KENT MACMILLAN, B.S., *Assistant for Northern Illinois*  
PRESSLEY ADAMS GLENN, A.M., *Chief Horticultural Inspector*  
ROBERT DOUGLAS GLASGOW, A.B., *Special Assistant*  
S FRED PRINCE, *Illustrator*

The work of the *State Entomologist's Office* has been done at the University of Illinois since January, 1885; by legislative enactment in 1899 it was permanently established at the University, the trustees of which are required by that act to provide for the Entomologist and his assistants such office and laboratory rooms as may be necessary to the performance of their duties.

It is the duty of this officer to investigate all insects dangerous to any valuable property or dangerous to the public health, and to conduct experiments for the control of injuries to persons or property by insects, publishing the results of his researches biennially in his official report. He is required also to inspect and certify annually all Illinois nurseries, and to maintain a general supervision of the horticultural property of the State with respect to its infestation by dangerous insects and its infection with contagious plant disease.

Twenty-seven reports have now been published by the Entomologist, fourteen of them since the transfer of his office to the University.

# THE STATE WATER SURVEY

EDMUND JANES JAMES, Ph.D., LL.D., PRESIDENT

## STAFF

EDWARD BARTOW, Ph.D., *Director*  
OTTO RAHN, Ph.D., *Consulting Bacteriologist*  
SAMUEL WILSON PARR, M.S., *Consulting Chemist*  
ARTHUR NEWELL TALEOT, C.E., *Consulting Engineer*  
PAUL HANSEN, B.S., *Engineer*  
WILFRED FRANCIS LANGELIER, M.S., *Inspector*  
HARRY PEACH CORSON, M.S., *Chemist*  
RALPH HILSCHER, B.S., *Assistant Engineer*  
WALTER G STROMQUIST, A.B., B.S., *Assistant Engineer*  
MILFORD EVERETT HINDS, B.S., *Assistant Chemist*  
FRED WILBUR TANNER, B.S., *Assistant Bacteriologist*  
EDWARD EMIL HOLLMANN, B.S., *Assistant Chemist*  
FLOYD WILLIAM MOHLMANN, B.S., *Assistant Chemist*  
HARRY FOSTER FERGUSON, *Assistant Engineer*

A chemical survey of the waters of the State was begun in the latter part of September, 1895. In 1897 the legislature authorized the continuance of the work and directed the Trustees of the University to establish a chemical and biological survey of the waters of the State. In 1911 the legislature imposed additional duties on the State Water Survey, authorizing the Water Survey to employ field men to inspect water supplies, water-sheds, etc., and to make, free of charge, sanitary examinations of water for citizens of Illinois, and made increased appropriations. The purpose of the Survey is to collect facts and data concerning the water supplies of the State; to make such chemical and biological examination and analyses as shall serve to demonstrate their sanitary condition; to determine standards of purity of drinking waters for the various sections of the State; to inspect water sheds and to make any investigations that will show best how to obtain and conserve an adequate supply of pure water for domestic and manufacturing purposes in every part of the State.

The Survey is a division of the department of chemistry of the University of Illinois, and special laboratories are equipped in the Chemistry Building for conducting the work. The engineering division is located in Engineering Hall.

# THE STATE GEOLOGICAL SURVEY

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## COMMISSION

GOVERNOR CHARLES S. DENEEN, *Chairman*  
PROFESSOR T. C. CHAMBERLAIN, *Vice-Chairman*  
PRESIDENT EDMUND JAMES JAMES, *Secretary*

## STAFF

FRANK WALBRIDGE DEWOLF, *Director*, Urbana  
EDWARD BARTOW, *Consulting Chemist in Water Analysis*, University of Illinois, Urbana  
ULYSSES S GRANT, *Consulting Geologist in Lead and Zinc Studies*, Northwestern University, Evanston  
SAMUEL WILSON PARR, *Consulting Chemist in Coal Investigations*, University of Illinois, Urbana  
CHARLES WESLEY ROLFE, *Consulting Geologist in Clay Investigations*, University of Illinois, Urbana  
ALBERT VICTOR BLEININGER, *Consulting Ceramist*, U. S. Bureau of Standards, Pittsburgh, Pa.  
ROLLIN D SALISBURY, *Consulting Geologist in Preparation of Educational Series*, University of Chicago, Chicago  
FRED HALL KAY, *Assistant State Geologist*, Urbana  
THOMAS EDMUND SAVAGE, *Geologist*, University of Illinois, Urbana  
STUART WELLER, *Geologist*, University of Chicago, Chicago  
GILBERT H CADY, *Assistant Geologist*, Urbana  
RAYMOND SILLIMAN BLATCHLEY, *Assistant Geologist*, Urbana  
E WESLEY SHAW, *Assistant Geologist in Co-operative Surveys*, Urbana, Ill., and Washington, D. C.  
JUSTA M LINDGREN, A.M., *Chemist*, Urbana  
WILLIAM HENRY HERRON, *Geographer in charge of Topographical Surveys*, Urbana, Ill., and Washington, D. C.

The Forty-fourth General Assembly passed an act, in force July 1, 1905, providing for the establishment at the University of Illinois of the *State Geological Survey*. The Survey is under the control of a Commission, of which the President of the University is an *ex officio* member.

The purpose of the Survey is primarily the study and exploration

of the mineral resources of Illinois. Field parties are organized for the investigation of oil, clay, coal, stone, artesian water, cement materials, and road materials, and for general scientific investigations. The Survey is charged also with the duty of making a complete topographical and geological survey of the State. The topographical surveys are now being carried on in cooperation with the United States Geological Survey. These will lead to the publication of a series of bulletins and maps, eventually covering the entire State.

The Forty-fifth General Assembly further charged the Commission with the duty of making surveys and studies of lands subject to overflow, with a view to their reclamation. Work has been carried on in co-operation with the Rivers and Lakes Commission, the United States Geological Survey, and the United States Department of Agriculture, along the Sangamon, Kankaskia, Big Muddy, Little Wabash, Embarrass, Spoon, and Saline rivers. Reports have been issued on the Little Wabash and the Kankaskia.

The laboratory work is done in connection with various department laboratories of the University. The equipment includes a working library, maps, and a growing collection, illustrating the geological and the economical resources of the State. Sixteen bulletins and a large number of maps have been published. Many temporary assistants besides the regular corps are employed each summer.

Under an agreement between the State Geological Survey and the College of Engineering on the one hand, and the United States Bureau of Mines on the other, a branch station has been located at Urbana for the demonstration of modern methods in mine-rescue work, and for the study of mining methods and mine wastes in Illinois. The station is equipped with breathing and resuscitation apparatus, electric safety lamps, and other devices by means of which it is possible to enter mines which may be filled with dangerous gases. The station is maintained, not as a permanent feature, but in an effort to demonstrate to the operators, miners, and mine inspectors the value of the apparatus and to encourage its general installation in the State.

A similar agreement by the above-named parties provides for a co-operative investigation of the Illinois coal mining industry. The Forty-seventh General Assembly made appropriations to carry on the work for two years. See page 435.

# THE BOARD OF EXAMINERS IN ACCOUNTANCY

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EDMUND JANES JAMES, Ph.D., LL.D., PRESIDENT

## BOARD OF EXAMINERS

W. E. SEATREE, C.P.A., *Chicago*

JOHN ALEXANDER COOPER, C.P.A., *Chicago*

MARQUIS EATON, *Chicago*

## UNIVERSITY COMMITTEE

DAVID KINLEY, *Chairman*

M. H. ROBINSON, *Secretary*

CHARLES MAXWELL McCONN

By a law passed in 1903 the State University is made an examining board of applicants for certificates as certified public accountants. To carry out the provisions of the law the Board of Trustees have appointed a board of three examiners to prepare, conduct, and grade examinations, and a University committee to conduct the routine work. Under the law one examination must be held each year in May, but examinations have been held also in November or December of each year in which there were a sufficient number of applicants. All the examinations thus far given have been held in the city of Chicago.

Applicants for the certificate of Certified Public Accountant are required to pass examinations in theory of accounts, commercial law, auditing, and practical accounting.



# CO-OPERATIVE INVESTIGATION OF ILLINOIS COAL PROBLEMS AND MINE RESCUE STATION

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EDMUND JANES JAMES, Ph.D., LL.D., PRESIDENT

## STAFF

### *College of Engineering—*

WILLIAM FREEMAN MYRICK GOSS, M.S., D.Eng., *Dean*

HARRY HARKNESS STOEK, B.S., E.M., *Professor of Mining Engineering*

STEPHEN OSGOOD ANDROS, A.B., B.S., E.M., *Mining Engineer and Field Assistant*

*Special Mining Engineers and Field Samplers*

### *State Geological Survey—*

FRANK WALBRIDGE DEWOLF, B.S., *Director, State Geological Survey*

SAMUEL W. PARR, M.S., *Consulting Chemist*

FRED HALL KAY, B.S., *Assistant State Geologist*

KESSACK DUKE WHITE, B.E.M., *Assistant Geologist*

JUSTA M. LINDGREN, A.M., *Chemist*

*Special Geologists and Field Samplers*

### *United States Bureau of Mines—*

JOSEPH AUSTIN HOLMES, B.S., D.Sc., LL.D., *Director, United States Bureau of Mines*

ROBERT Y. WILLIAMS, A.B., E.M., *Mining Engineer, U. S. Bureau of Mines, Urbana, Illinois*

JAMES M. WEBB, *Foreman, Urbana Mine Rescue Station*

JOHN J. RUTLEDGE, E.M., Ph.D., *Mining Engineer, studying the use of explosives*

NELSON HORATIO DARTON, *Geologist, studying occurrences of gases in coal mines*

LOUIS A. SCHOLL, B.S., *Chemist, studying the explosibility of coal dust*

The Department of Mining Engineering of the University of Illinois, the State Geological Survey, and the United States Bureau of Mines are co-operating in the investigation of some of the problems connected with the mining of coal in the State of Illinois, under authority granted by the Forty-seventh General Assembly, for a period of two years.

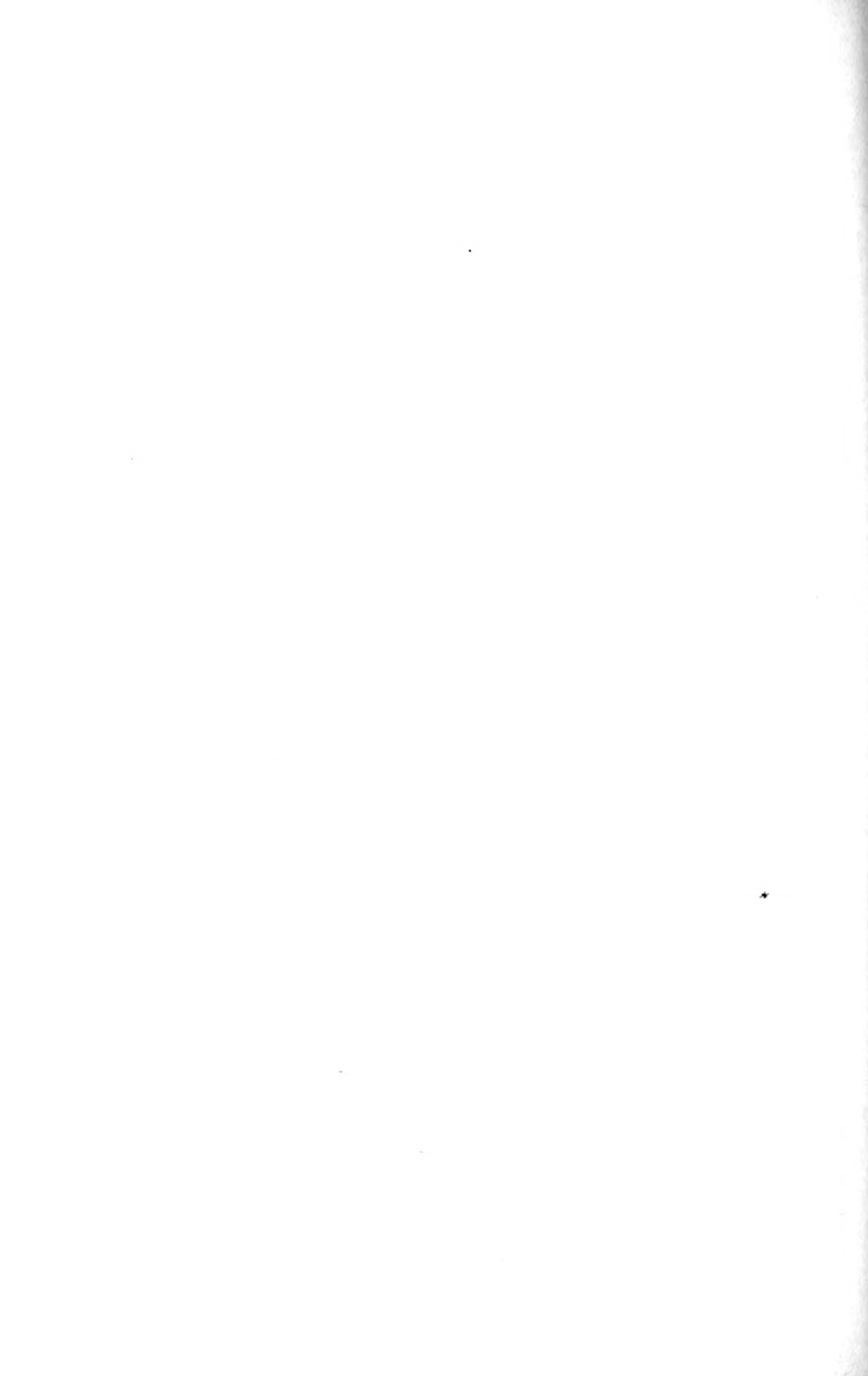
This co-operative work is constructive as well as statistical, based upon accurate data and taking account of all existing conditions, to enable the operators and miners of the State to produce coal more safely, more cheaply, and with less waste.

A force of trained mining engineers, geologists, and chemists has been placed at the disposal of the coal industry of Illinois.

A Mine Explosion and Mine Rescue Station is maintained in Urbana by the United States, in co-operation with the State Geological Survey and the Department of Mining Engineering of the University of Illinois.

The purpose of this station is to interest all connected with the mining industry in the use of breathing and resuscitation apparatus in connection with rescue work in mines, as an aid in fighting mine fires, and in the opening of mines which have been sealed on account of fires. The station not only gives demonstrations, but undertakes to train men in the use of such apparatus, the service being rendered gratuitously, and, as far as possible, to all interested in the subject.

PART V  
LIST OF STUDENTS, ETC.  
(1912—1913)



# LIST OF STUDENTS

## THE GRADUATE SCHOOL

Abe, Mikishi B.S. ( <i>Kogaku-Tokugyoshi</i> ) 1905	(SS)* <i>Ichinoseki, Japan</i> Theoretical and Applied Me- chanics
Ackert, James Edward A.B., 1909	(SS) <i>Dixon</i> Fellow in Zoology <i>Chicago</i>
Adler, Frederick Henry A.B. ( <i>Ohio State Univ.</i> ) 1909 A.M., 1911	Fellow in German <i>Appleton, Wisconsin</i> Organic Chemistry <i>Alpha</i>
Allen, Chester Harmon A.B. ( <i>Lawrence Coll.</i> ) 1912	Animal Husbandry <i>Sumner Hill</i>
†Allison, Harry Orson B.S., 1906	Electrical Engineering <i>Prairie du Rocher</i>
†Anderson, Clair Elmore B.S., 1911	Latin <i>Elgin</i>
Anderson, Isbella (Work for A.B. completed)	Electrical Engineering <i>Boulder, Colo.</i>
Apar, Leo Mahlon B.S., 1912	Zoology <i>Evanston</i>
Ashley, June Maud A.B. ( <i>Univ. Colorado</i> ) 1912	Botany <i>Chicago</i>
Atwell, Ruth Sarah B.S. ( <i>Northwestern Univ.</i> ) 1911	Mechanical Engineering <i>Elgin</i>
†Austin, Clem C B.S., 1907	Scholar in Electrical Engineer- ing <i>Wellsboro, Pa.</i>
Bagley, Glen David B.S., 1912	Travelling Fellow in German <i>Canton</i>
†Bailey, Margaret Lewis A.B. ( <i>Cornell Univ.</i> ) 1903 A.M., 1910 Ph.D., 1912	Physics <i>Norman, Oklahoma</i> Chemistry <i>Tarkio, Mo.</i>
Bair, William Harry B.S. ( <i>Ohio Northern Univ.</i> ) 1908	Zoology <i>Greenville, Mich.</i>
Baker, Robert Earl A.B. ( <i>Univ. Oklahoma</i> ) 1912	Bacteriology <i>Champaign</i>
Barger, Panzy Louise B.S. ( <i>Tarkio Coll.</i> ) 1911 A.M., 1912	(SS) German Literature SS <i>South Hartford, N. Y.</i> SS Education <i>Grand Forks, N. D.</i>
Barlow, Bronson B.S. ( <i>Michigan Agr'l. Coll.</i> ) 1902	Theoretical and Applied Me- chanics <i>Urbana</i>
Barto, Philip Stephan A.B., 1906; A.M., 1910	Chemistry SS <i>Urbana</i> History
Beattie, George Wilson A.B. ( <i>Ripon Coll.</i> ) 1901	
Becker, Albert J B.S., M.E., ( <i>Univ. Michigan</i> ) 1903 1907	
Bell, James Edgar B.S. ( <i>Univ. Chicago</i> ) 1905	
Belting, Paul Everett A.B., 1912	

\*Attendance during both the Summer Session of 1912 and the regular session of 1912-13 is indicated by SS in parenthesis; during the Summer Session only, by SS.

†On leave of absence.

‡Candidate for professional degree in engineering.

Biddle, Harry Clarence A.B. ( <i>Wabash Coll.</i> ) 1909 A.M. ( <i>Ohio State Univ.</i> ) 1912	SS	<i>Urbana</i>
Biester, Alice A.B., 1912		Physiological Chemistry <i>Garden Prairie</i>
Birney, Thomas Milton A.B., 1911	SS	Scholar in Household Science <i>Macomb</i>
Block, Walter Robert B.S., 1907		Education <i>Champaign</i>
Bole, Simeon James A.B. ( <i>Univ. Michigan</i> ) 1906 A.M., 1912		Agronomy <i>Champaign</i>
Boomsalter, George Paul B.S. ( <i>Michigan Agr. Coll.</i> ) 1906		Education <i>Grand Haven, Mich.</i>
Brigham, Reed O'Shea B.S. ( <i>Ohio State Univ.</i> ) 1912		Civil Engineering <i>Toledo, Ohio</i>
Brooks, Alice Dorothea A.B. ( <i>Mount Holyoke Coll.</i> ) 1912		Botany <i>Haverhill, Mass.</i>
Brown, Hugh Alexander B.S., 1911		Zoology <i>Urbana</i>
Brown, Robert Wesley B.S. ( <i>Northwestern Univ.</i> ) 1911		Electrical Engineering <i>Chicago</i>
Brumfiel, Daniel Milton A.B. ( <i>Lombard Coll.</i> ) 1912		Scholar in Geology <i>Connersville, Ind.</i>
Brush, Elizabeth Parnham A.B. ( <i>Smith Coll.</i> ) 1909 A.M., 1912		Scholar in Entomology <i>Boulder, Colo.</i>
Bryant, John Myron B.S., E.E. ( <i>Worcester Poly. Inst.</i> ) 1901, 1909 M.S., 1911		History <i>Urbana</i>
Buchen, Walther Albert A.B. ( <i>Univ. Wisconsin</i> ) 1911	(SS)	Electrical Engineering <i>Montello, Wis.</i>
Burlison, William Leonidos B.S. ( <i>Univ. Oklahoma</i> ) 1905 M.S., 1908	(SS)	English <i>Champaign</i>
Burns, Josephine Elizabeth A.B., 1909, A.M., 1911		Agronomy <i>Macomb</i>
*Burt, Henry Jackson B.S., 1896		Fellowship in Mathematics <i>Wilmette</i>
Burton, Lawrence Vreeland B.S., 1911		Civil Engineering <i>Aurora</i>
Buyers, Archie Stanton B.S., 1908		Physiological Chemistry <i>Sterling</i>
Carmichael, Berton Eugene B.S., 1905		Mechanical Engineering <i>Wooster, Ohio</i>
Carscallen, George Ernest A.B. ( <i>Wabash Coll.</i> ) 1906 A.M., 1910		Animal Husbandry <i>Frankfort, Ind.</i>
Case, Harold Clayton M B.S., 1912		Mathematics <i>Urbana</i>
Chang, Luan Graduate <i>Tangshan Coll., China</i>		Animal Husbandry <i>Canton, China</i>
Chang, Yun-din Chinzun B.S., 1912		Civil Engineering <i>Shanghai, China</i>
Chester, Ann A.B., 1905		Agronomy <i>Champaign</i>
Chu, Vee Gih (Work for B.S. completed)		English <i>Shanghai, China</i>
†Clark, Darwin Orlando A.B. ( <i>Drury Coll.</i> ) 1896 A.M., 1909		Chemistry <i>Carthage, Mo.</i>
		History

\*Candidate for professional degree in engineering.

†On leave of absence.

- Clark, Fred Emerson  
A.B. (*Albion Coll.*) 1912
- Clark, Karl Adolf  
A.B., A.M. (*McMaster Univ.*) 1910,  
1912
- Cobb, Margaret Vara  
A.B. (*Radcliffe Coll.*) 1910
- \*Collins, Edgar Francis  
B.S., 1898
- Collins, Vida Lucile  
A.B. (*Univ. Michigan*) 1907  
A.M., 1910
- Conel, Jesse Leroy  
A.B. (*James Millikin Univ.*) 1912
- Corson, Harry Peach  
B.S., (*New Hampshire Coll.*) 1910,  
M.S., 1912
- Cort, William Walter  
A.B. (*Colorado Coll.*) 1909  
A.M., 1911
- Cox, Sidney Hayes  
A.B. (*Bates Coll.*) 1911
- Crandall, William Truman  
B.S. (*Milton Coll.*) 1906  
B.S.A. (*Univ. Wisconsin*) 1909
- Cravens, Lucile Starr  
A.B. (*Lombard Coll.*) 1909  
A.M., 1911
- Cunningham, Harrison Edward  
A.B. (*Univ. Vermont*) 1904
- Davis, George William  
B.S. (*Missouri Valley Coll.*) 1911
- Davis, Lloyd Hayes  
A.B. (*Wabash Coll.*) 1911
- Davis, Raymond Earl  
B.S. (*Univ. Maine*) 1911
- Davison, Bert Stover  
A.B. (*Indiana Univ.*) 1911
- Deffendall, Prentice Hoover  
A.B. (*DePauw Univ.*) 1906
- Dent, John Adlum  
M.E. (*Lehigh Univ.*) 1905
- Dibell, Mabel Elizabeth  
A.B. (*Western Coll.*) 1910
- Ditchy, Jay Karl  
A.B. (*Univ. Michigan*) 1911
- Douthitt, Herman  
A.B. (*Univ. Oklahoma*) 1911  
A.M., 1911
- Dowell, Edward Samuel  
A.B. (*Oberlin Coll.*) 1910
- Dowrie, George William  
A.B. (*Lake Forest Coll.*) 1911  
A.M. (*Univ. Chicago*) 1907
- Dutcher, Raymond Adams  
B.S., M.S. (*So. Dakota State Coll.*)  
1907, 1910  
A.M. (*Univ. Missouri*) 1912
- Edwards, Forrest Glen  
A.B. (*Lombard Coll.*) 1907
- Eells, Willard Clarke  
B.S., 1911
- Albion, Mich.*  
Scholar in Economics  
*Toronto, Ont.*
- Chemistry  
*Falls Church, Va.*  
Fellow in Zoology  
*Schenectady, N. Y.*  
Electrical Engineering  
*Bear Lake, Mich.*
- English  
*Decatur*  
Scholar in Zoology  
*Laconia, N. H.*
- Chemistry  
*Colorado Springs, Colo.*
- Zoology  
*Poland, N. Y.*  
Scholar in English  
*Urbana*
- Dairy Husbandry  
*Kansas City, Mo.*
- Latin  
*Burlington, Vt.*  
English  
*Marshall, Mo.*
- Physiological Chemistry  
*Crawfordsville, Ind.*  
Animal Chemistry  
*Windsor Mills, Quebec*  
Civil Engineering  
*New Richmond, Ind.*
- Chemistry  
*Taylorville*  
English  
*Champaign*  
Mechanical Engineering  
*Wolcott, Ind.*  
Botany  
*Cleveland, Ohio*  
French  
*Sulphur, Okla.*
- Zoology  
*Pleasin, Ohio*  
Scholar in Political Science  
*Pontiac*
- Economics  
*Brookings, S. D.*
- Chemistry  
*Princeville*  
Chemistry  
*Mazon*  
Fellow in Theoretical and Applied Mechanics

\*On leave of absence.

- Ekblaw, Karl John Theodore  
B.S., 1909
- Ekblaw, Walter Elmer  
A.B., 1910; A.M., 1912
- Elmer, Manuel Conrad  
B.S. (*Northwestern Coll.*) 1911  
A.M., 1912
- Engle, Edgar Wallace  
B.S. (*Drury Coll.*) 1912
- Englis, Duane Taylor  
A.B. (*Eureka Coll.*) 1912
- Ensign, Newton Edward  
A.B. (*McKendree Coll.*) 1905  
A.B. (*Oxford Univ.*) 1908  
B.S., 1911
- Erdahl, Absalom C  
A.B. (*St. Olaf Coll.*) 1911
- \*Erwin, John Frank  
B.S., 1907
- Eskelson, Ola Mattie Josephine  
B.S. (*Hedding Coll.*) 1912
- Fairhall, Lawrence Turner  
B.S., 1911
- Farwell, Stanley Prince  
B.S., 1907, M.S., 1910
- Fauquher, Silas Edgar  
B.S. (*Earlham Coll.*) 1909
- Faust, Ernest Carroll  
A.B. (*Oberlin Coll.*) 1912
- \*Fischer, Louis Engelmann  
B.S., 1898
- Fisk, Ira William  
B.S., 1909
- Flaningam, Miletus Lafayette  
B.S. (*Northwestern Univ.*) 1904
- Fleener, Frank Leslie  
A.B. (*Denison Univ.*) 1912
- Forrey, Edna Laura  
A.B. (*Heidelberg Univ.*) 1906  
A.M. (*Miami Univ.*) 1909
- †Fowler, Chester Charles  
B.S., 1909
- Fracker, Stanley Black  
A.B. (*Buena Vista Coll.*) 1910  
M.S. (*Iowa State Coll.*) 1912
- Gardner, John Joseph  
B.S. (*Mass. Agr't Coll.*) 1905  
B.S. (*Boston Univ.*) 1912
- Geyer, Denton Loring  
A.B. (*Univ. Wisconsin*) 1910
- Gillette, Clinton Edgar  
B.S., M.S., (*Cornell Coll.*) 1910, 1911
- Glasgow, Grace  
B.S., M.S., 1912
- Glasgow, Hugh  
A.B., 1908
- Glasgow, Robert Douglass  
A.B., 1908
- Glasgow, Ruth  
B.S., M.S., 1912
- Rantoul  
Architecture  
Rantoul  
Geology  
Naperville
- Sociology  
Buffalo, Mo.  
Chemistry  
Eureka  
Scholar in Industrial Chemistry  
Altamont
- Theoretical and Applied Mechanics  
Frost, Minn.  
Scandinavian Languages  
Moline  
Mechanical Engineering  
Abingdon  
Scholar in Mathematics  
Danville  
Chemistry  
Chicago  
Electrical Engineering  
Evansville, Ind.  
Scholar in Botany  
Carthage, Mo.  
Zoology  
St. Louis, Mo.  
Civil Engineering  
Urbana  
Electrical Engineering  
Urbana  
Education  
Dodge Center, Minn.  
Geology  
Wawaka, Ind.
- (SS)
- Fellow in German  
Ames, Iowa  
Chemistry  
Storm Lake, Ia.
- Scholar in Entomology  
Champaign
- Pomology  
Madison, Wis.  
Fellow in Philosophy  
Lisbon, Ia.  
Inorganic Chemistry  
Tennessee  
Botany  
Tennessee  
Entomology  
Tennessee  
Entomology  
Tennessee  
Botany

\*Candidate for professional degree in engineering.

†In absentia.



- Goebel, Julius Ludwig, Jr.  
A.B., 1912
- Gohn, Lloyd Elias  
(Work for A.B. completed)
- Gonnerman, Harrison Frederick  
B.S., 1908
- Good, John Walter  
A.B. (*Ersline Coll.*) 1902  
A.M. (*Ersline Theological Sem.*)  
1904  
B.D. (*Allegheny Theological Sem.*)  
1905
- Goodman, Byne Frances  
A.B., 1912
- Goodwin, Thomas Gregory  
A.B. (*Harvard Univ.*) 1912
- Graham, Sappho Cecelia  
A.B. (*Iowa State Coll.*) 1911
- Gray, Cora Emeline  
B.S., M.S. (*Univ. Chicago*) 1906,  
1909
- Green, Bessie Rose  
A.B., A.M., 1907, 1910
- Greene, James Henry  
B.S., 1908
- Grimes, Ruby Mabel  
A.B. (*Yankton Coll.*) 1911
- Gross, Alfred William  
Ph.B. (*Northwestern Coll.*) 1909
- Gustafson, Charles LeRoy  
B.S., 1912
- Gutberlet, John Earl  
A.B. (*Bethany Coll.*) 1909  
A.M., 1911
- Gutsell, James Squier  
A.B. (*Cornell Univ.*) 1911
- Gwinn, Alta  
A.B., 1907
- Haan, Mary Anna  
A.B., 1912
- Hadley, Harry Fielding  
A.B. (*James Millikin Univ.*) 1911  
A.M., 1912
- Hake, Harry Gray  
B.S., M.S., 1907, 1910
- Hall, Homer  
A.B., 1912
- Hall, Royal Glenn  
A.B. (*Park Coll.*) 1912
- Hanford, Alfred Chester  
A.B., 1912
- Harbarger, Sada Annis  
A.B. (*Ohio State Univ.*) 1906  
A.M., 1909
- Haughwont, Mary Rosalind  
A.B., A.M. (*Wilson Coll.*) 1894, 1903
- †Haungs, Howard Charles  
B.S., 1907
- Heater, Elmer Franklin  
B.S., 1911
- Hebbert, Clarence Mark  
B.S. (*Otterbein Univ.*) 1911
- Urbana  
Political Science  
Rochester, Ind.  
Education  
Dixon  
Theoretical and Applied Me-  
chanics  
Fayetteville, Tenn.
- Fellow in English Literature  
Champaign  
Scholar in History  
Jamaica Plain, Mass.  
English  
Cresten, Ia.  
Scholar in German  
W. Palm Beach, Fla.
- Economics  
Ivesdale  
Zoology  
Dubuque, Ia.  
Animal Husbandry  
Wagner, S. D.  
Scholar in Mathematics  
Monticello  
Education  
Boone, Ia.  
Architecture  
Hardy, Nebr.
- Zoology  
Ithaca, N. Y.  
\*Scholar in Zoology  
Urbana  
English  
Aurora  
Scholar in Latin  
Decatur
- Fellow in Industrial Chemistry  
Urbana  
Electrical Engineering  
Belvidere  
Scholar in English  
Goodman, Mo.  
Zoology  
Carbondale  
Scholar in Political Science  
Columbus, Ohio
- English  
Bellefonte, Pa.  
Botany  
Peoria  
Civil Engineering  
Champaign  
Electrical Engineering  
Arvada, Wyoming  
Mathematics

\*Resigned, Dec. 31, 1912.

†Candidate for professional degree in engineering.

Hedgcock, William Everett	SS	<i>Plymouth</i>
B.S., 1909		Agronomy
Heitkamp, George William		<i>Cuba, Wis.</i>
A.B., ( <i>Univ. Wisconsin</i> ) 1912		Physiography
Held, Felix Emil	(SS)	<i>Emporia, Kan.</i>
A.B., A.M. ( <i>Emporia Coll.</i> ) 1902, 1908		German Literature
Hendrix, William Samuel		<i>Sylacauga, Ala.</i>
A.B. ( <i>Harvard Univ.</i> ) 1907, A.M., 1909		
A.M. ( <i>Cornell Coll.</i> ) 1910		Spanish
Hess, Raymond	(SS)	<i>Plover, Ia.</i>
A.B., ( <i>Morningside Coll.</i> ) 1912		Organic Chemistry
Heuse, Edward Otto		<i>Madison, Ind.</i>
B.S. ( <i>Hanover Coll.</i> ) 1900, M.S., 1907		Fellow in Physical Chemistry
Hewes, Charles Kay		<i>Quincy</i>
B.S., 1912		Organic Chemistry
Hill, Frank Ernest		<i>San Jose, Calif.</i>
A.B. ( <i>Stanford Univ.</i> ) 1911		English
Hill, William Griffith		<i>Carthage</i>
A.B. ( <i>Carthage Coll.</i> ) 1912		Scholar in English
Hinds, Milford Everett		<i>Peotone</i>
A.B. ( <i>Northwestern Univ.</i> ) 1912		Chemistry
Hobart, Clyde Monroe		<i>Urbana</i>
A.B., 1912		Philosophy
Holley, Charles Elmer		<i>Franklin Grove</i>
A.B., 1912		Scholar in Education
Hollinshead, Melvin Arthur		<i>Port Clinton, Ohio</i>
A.B. ( <i>Albion Coll.</i> ) 1911		English
Hollmann, Edward Emil		<i>St. Louis, Mo.</i>
B.S., 1912		Chemistry
Hornbeck, John Wesley		<i>Perry</i>
B.S. ( <i>Illinois Wesleyan Univ.</i> ) 1906		Physics
A.M., 1909		<i>Danville</i>
Hornor, Nellie Nancy		Scholar in Physics
A.B., 1912		<i>Chicago</i>
Houston, Harold Allen		Fellow in Railway Engineering
B.S. ( <i>Purdue Univ.</i> ) 1911		<i>Litchfield</i>
Howard, Joseph Whitney		Scholar in Organic Chemistry
A.B. ( <i>Shurtleff Coll.</i> ) 1912		<i>Tacoma, Wash.</i>
*Howell, Leslie Dillon		Architectural Engineering
B.S., 1907		<i>Urbana</i>
Huber, Joseph Earl		Scholar in Civil Engineering
B.S., 1912		<i>Cedar Grove, Wis.</i>
Huenink, Henry Lawrence		Chemistry
A.B. ( <i>Carroll Coll.</i> ) 1911		<i>Whitewater, Wis.</i>
Hulce, Ray Stillman		Dairy Husbandry
B.S.A. ( <i>Univ. Wisconsin</i> ) 1911		<i>Chicago</i>
*Ilg, George Martin Aloysius		Civil Engineering
B.S., 1909	SS	<i>Greenville</i>
Ingels, Nellie Louise		Mathematics
Ph.B. ( <i>Greenville Coll.</i> ) 1911	(SS)	<i>Fairbury</i>
Inman, Austin Willis		History
A.B., Ph.M. ( <i>Univ. Chicago</i> ) 1906, 1908		<i>Sacramento, Calif.</i>
*Ireland, Washington Parker		Civil Engineering
B.S., 1903		<i>Grayling, Mich.</i>
Ivey, Paul Wesley		Scholar in Economics
A.B. ( <i>Lawrence Coll.</i> ) 1912		<i>Neillsville, Wis.</i>
Jahr, Marvin Edward		Agronomy
A.B., ( <i>Univ. Wisconsin</i> ) 1905		<i>Urbana</i>
James, Helen Dickson		German
A.B., 1910		

\*Candidate for professional degree in engineering.

James Leonard Vaughan B.S., 1906, M.S., 1912		Amboy Electrical Engineering
*Jensen, Joseph Norman B.S., 1906		Chicago Civil Engineering
Jinguji, Genjiro B.S., 1912		Choshi, Japan Electrical Engineering
Johnson, Gertrude B.S., 1911		Chicago Zoology
Jones, Lloyd Theodore A.B. ( <i>Lake Forest Coll.</i> ) 1909 M.S., 1912		Raymond Physics
Jordan, Harvey Herbert B.S. ( <i>Univ. Maine</i> ) 1910		Waltham, Me. Theoretical and Applied Me- chanics
Kaiser, John Boynton A.B. ( <i>Western Reserve Univ.</i> ) 1908 B.L.S. ( <i>N. Y. State Library</i> ) 1910		Urbana Political Science
Kamm, Oliver B.S., 1911	(SS)	Highland Chemistry
Keller, Oran B.S. ( <i>Rutgers Coll.</i> ) 1912		New Brunswick, N. J. Chemistry
Kelso, Ruth A.B., A.M., 1908, 1909		Escondido, Calif. English
Kiernan, Arthur Ph.B. ( <i>Brown Univ.</i> ) 1911		Providence, R. I. Mathematics
Kiler, Aureka Belle A.B., 1896		Champaign Education
Kimball, Sidney Fiske A.B., M.Arch. ( <i>Harvard Univ.</i> ) 1909, 1912		Boston, Mass. Architecture
Kircher, Edward August Theodore A.B., A.M., 1911, 1912		Chicago Fellow in Mathematics
Kirkpatrick, Harold H A.B., 1897	SS	Mayview Education
Kiyohara, Ippei B.S. ( <i>State Coll. Washington</i> ) 1911		Maka-Gun, Tokushima, Japan Electrical Engineering
Koenig, Henry Herman B.S. ( <i>Univ. Wisconsin</i> ) 1912		Champaign Electrical Engineering
Koons, Guy Jink B.S., 1912	SS	Murphysboro Education
*Korsmo, Amund Marius B.S., 1909		Oakley, Idaho Civil Engineering
Kratz, Elwin Valentine B.S., 1912		Champaign Scholar in Architectural En- gineering
Lamkey, Ernest Michael Rudolph (Work for A.B. completed)		Riverton Botany
Lawson, Edward Latan A.B., Ph.B. ( <i>Union Christian Coll.</i> ) 1901, 1902	SS	Moweaqua Education
Layng, Thomas Ernest A.B., A.M. ( <i>McMaster Univ.</i> ) 1909, 1912		Toronto, Canada Chemistry
Lehenbauer, Philip Augustus A.B. ( <i>Westminster Coll.</i> ) 1907 B.S. ( <i>Millikin Univ.</i> ) 1908	(SS)	Hannibal, Mo. Fellow in Botany
Leonard, Frank Bonner A.B., 1912		Metropolis Economics
Lillehei, Ingebright L A.B., A.M. ( <i>Univ. Minnesota</i> ) 1908, 1909		Minneapolis, Minn. Scandinavian
Linkins, Ralph Harlan A.B. ( <i>Illinois Coll.</i> ) 1911		Jacksonville Zoology

\*Candidate for professional degree in engineering.

- Long, Walter Sterrett  
A.B., A.M. (*Ohio Wesleyan Univ.*)  
1905, 1908
- Loring, Frank Carlton  
B.S. (*Purdue Univ.*) 1904  
A.M. (*Columbia Univ.*) 1907
- Ludwig, Clinton Albert  
B.S. (*Purdue Univ.*) 1912
- Lutz, Gretchen Katherine  
A.B. (*Albion Coll.*) 1909
- McDermet, Rudolph  
B.S., 1912
- Macdonald, Janet Malcolm  
A.B. (*Morningside Coll.*) 1910
- McDowell, Samuel Kline  
B.S. (*Tri State Coll.*) 1909
- Macfarlane, Wallace  
B.S. (*Agr'l Coll. Utah*) 1911
- McGregor, Harold Hossack  
A.B. (*McMaster Univ.*) 1910  
M.S. (*Univ. Louisville*) 1912
- McKinney, Henry Theodore  
(Work for A.B. completed)
- Maney, George Alfred  
B.S. (*Univ. Minnesota*) 1911
- Martin, Oscar Ross  
A.B. (*Central Wesleyan Coll.*) 1907
- Martz, Robert John  
B.S. (*Franklin Coll.*) 1910
- Mason, Mayne Seguire  
B.S., 1911
- Mathewson, Louis Clark  
A.B., A.M. (*Albion Coll.*) 1910, 1911  
A.M., 1912
- \*Mesicoff, Joseph Albert  
B.S., 1899
- Millard, Earl Bowman  
A.B. (*Univ. Colorado*) 1910  
A.M. (*University Wisconsin*) 1911
- Millard, Floyd Hays  
B.S. (*Univ. Colorado*) 1910  
M.S., 1912
- Miller, J Earl  
A.B. (*Univ. Kansas*) 1910  
LL.B., 1912
- Miller, Roland Norton  
A.B. (*Lawrence Univ.*) 1911
- Miller, Wilford Stanton  
A.B., A.M. (*Indiana Univ.*) 1910,  
1911
- Mitchell, Harold Hanson  
A.B., 1909
- Mitchell, Karl Wilson  
A.B. (*Wittenberg Coll.*) 1908
- Mohlman, Floyd William  
B.S., 1912
- Moore, Laura M  
A.B. (*Indiana Univ.*) 1910
- Morris, Alice Elvira  
(Work for A.B. completed)
- Mosher, Edna  
B.S. (*Cornell Univ.*) 1908
- Urbana  
Chemistry  
Marion, Ind.  
Electrical Engineering  
*Brookville, Ind.*  
Botany  
*Albion, Mich.*  
Scholar in German  
*Seattle, Wash.*  
Fellow in Electrical Engineer-  
ing  
*Fort Dodge, Iowa*  
Scholar in Latin  
*Hoopston*  
Education  
*Salt Lake City, Utah*  
Fellow in Agronomy  
*Ottawa, Canada*  
Fellow in Chemistry  
*Hudgens*  
Education  
*Minneapolis, Minnesota*  
Fellow in Theoretical and Ap-  
plied Mechanics  
*Granite City*  
Economics  
*Fort Wayne, Indiana*  
Chemistry  
*Buda*  
Fellow in Electrical Engineer-  
ing  
*Macelona, Mich.*  
Fellow in Mathematics  
*Milwaukee, Wis.*  
Mechanical Engineering  
*Boulder, Colorado*  
Chemistry  
*Boulder, Colorado*  
Civil Engineering  
*Maysville, Kansas*  
Scholar in History  
*Appleton, Wisconsin*  
Organic Chemistry  
*Champaign*  
Psychology  
*Urbana*  
Chemistry  
SS *Georgetown, Ohio*  
English literature  
*Beardstown*  
Chemistry  
SS *Terre Haute, Indiana*  
History  
*Viola*  
Education  
*Kempt Shore, Nova Scotia*  
Scholar in Entomology

\*Candidate for professional degree in engineering.

- Mosher, William Earl  
Ph.B., M.E. (*Syracuse Univ.*) 1909, 1911
- Muncie, Fred Weaver  
A.B. (*Wabash Coll.*) 1910
- Myers, Lena Josephine  
(Work for A.B. completed)
- Nathanson, Jonas Bernard  
A.B. (*Ohio State Univ.*) 1912
- Nevins, Joseph Allan  
A.B., 1912
- Newell, Clyde Ross  
Ph.B., M.S. (*Yale Univ.*) 1910, 1912
- Newlin, Charles Ivan  
B.S., 1912
- Nickell, Lloyd Francis  
A.B., 1909  
A.M., 1911
- Niederman, Gertrude  
A.B., 1908
- Noerenberg, Clarence Eugene  
B.S., 1907, A.E., 1909, A.B., 1910 (SS)
- Nottelmann, Rudolph Hans  
A.B. (*Monmouth Coll.*) 1912
- Norbury, Frank Garm  
A.B. (*Albion Coll.*) 1912
- Olin, Hubert Leonard  
A.B. (*Univ. Iowa*) 1908  
M.S., 1911
- Olson, Peter John  
B.S. (*Colorado Agr'l Coll.*) 1910
- Orcutt, Alfred Walter  
B.S. (*Carleton Coll.*) 1909  
A.M. (*Lake Forest Coll.*) 1911
- Ostrander, Mabel Verona  
A.B., 1908 (SS)
- Ou, Hua Ching  
A.B. (*Peiyang Univ.*) 1906  
B.S., 1911  
M.S., 1912
- Owens, Albert W.  
B.S. (*Bucknell Univ.*) 1909
- Paine, Ellery Burton  
B.S., M.S., E.E., (*Worcester Poly. Inst.*) 1897, 1898, 1904
- Palmer, James Asbury  
A.B., A.M. (*Shuttleff Coll.*) 1897, 1901
- Parr, Rosalie Mary  
A.B., 1906; A.M., 1911
- Pearson, Frank A.  
B.S. (*Cornell Univ.*) 1912
- Peine, Arthur Frederick  
A.B. (*Illinois Wesleyan Univ.*) 1911
- Peltier, George  
A.B. (*Univ. Wisconsin*) 1910  
A.M. (*Washington Univ.*) 1912
- Perry, Leonora  
A.B., B.L.S., 1908, 1909
- Peters, William Warren  
A.B., M.S., (*Knox Coll.*) 1911, 1912
- Peterson, Alvah  
B.S. (*Knox Coll.*) 1911
- Pfeiffer, Benjamin Salisbury  
B.S., 1912
- Mechanicsville, N. Y.*  
Fellow in Mechanical Engineering
- Paris*  
Chemistry
- Urbana*  
English
- Toledo, Ohio*  
Scholar in Physics
- Camp Point*  
English
- Milford, Conn.*  
Bacteriology
- Indianapolis, Ind.*  
Animal Husbandry
- Champaign*  
Fellow in Chemistry
- Urbana*  
Chemistry
- Highland Park*  
Education
- Monmouth*  
Scholar in History
- Springfield*  
Scholar in Chemistry
- Tonkawa, Oklahoma*  
Chemistry
- Grafton, N. Dakota*  
Agronomy
- Lake Forest*  
Fellow in Zoology
- Chicago*  
American History
- Canton, China*  
Agronomy
- Lewisburg, Penn.*  
Chemistry
- Urbana*  
Electrical Engineering
- Clinton, Ky.*  
Greek
- Mapleton*  
Botany
- Beaver Falls, Pa.*  
Dairy Husbandry
- Bloomington*  
Fellow in History
- Grand Rapids, Mich.*  
Plant Pathology
- Hackensack, N. J.*  
English
- Hamilton*  
Electrical Engineering
- Galesburg*  
Entomology
- Peoria*  
Electrical Engineering

Pincomb, Helena Maude B.S. ( <i>Kansas Agr'l Coll.</i> ) 1901		Lenexa, Kansas Household Science
Place, Vergil Augustus B.S. ( <i>Ohio State Univ.</i> ) 1912		Hume, Ohio Animal Husbandry
Potter, Ralph Sydney A.B. ( <i>Lake Forest Coll.</i> ) 1909	SS	Fairburg
M.S., 1911		
Powers, Samuel Ralph A.B., 1912	SS	Organic Chemistry Petersburg
Prince, David Chandler B.S., 1912		Biology Springfield
Randolph, Oscar Alan B.S. ( <i>Missouri School of Mines</i> ) 1911	(SS)	Scholar in Electrical Engineering Urbana
Read, John William B.S., M.S. ( <i>Univ. Missouri</i> ) 1907, 1908		Physics Columbia, Missouri
*Reed, Susan M A.B. ( <i>Mt. Holyoke Coll.</i> ) 1907		Chemistry Westfield, Mass.
A.M., 1908		
Renich, Katherine Louise A.B., 1911		History Woodstock
Renich, Mary Emma A.B., 1911, A.M., 1912	SS	History Woodstock
Rhodes, Edward Melville LL.B., B.S., 1900, 1912		Mathematics Urbana
Riley, Charles Frederick Curtis A.B. ( <i>Univ. Michigan</i> ) 1905		Agronomy Champaign
M.S., 1912		
Rinaker, Clarissa A.B. ( <i>Blackburn Coll.</i> ) 1903		Fellow in Zoology Carlinville
A.M., 1911		
Rogers, Anna Sophie A.B., 1911	SS	Fellow in English Bushnell
Rolfe, Mary Annette, A.B., 1902		Latin Champaign
Rowland, Sidney Archie, Jr. A.B. ( <i>Ouachita Coll.</i> ) 1907	(SS)	Philosophy Bartleville, Okla.
Ruehe, Harrison August B.S., 1911		Physics Waukegan
Ruver, Harold Ordway B.S., C.E. ( <i>Dartmouth Coll.</i> ) 1908, 1909	(SS)	Dairy Husbandry Fitchburg, Mass.
Rutledge, George A.B., 1910	(SS)	Education Champaign
Sayre, Rollo Clifton B.S. ( <i>McKendree Coll.</i> ) 1909	SS	Mathematics Grayville
Scherfee, Samuel Hawthorne A.B. ( <i>Stanford Univ.</i> ) 1909		History Blountville, Tenn.
Schneider, Henry Frank A.B. ( <i>Central Wesleyan Coll.</i> ) 1910		Botany Nokomis
Schutte, Tenjes Henry B.S., 1912	SS	Chemistry Lenzburg
Sears, George Wallace B.S. ( <i>Drury Coll.</i> ) 1908		History Kidder, Mo.
M.S., 1911		
Seawell, Cornelia Ruth A.B. ( <i>Greenville Coll.</i> ) 1912		Inorganic Chemistry Greenville
Seely, Fred B B.S. ( <i>Worcester Poly. Inst.</i> ) 1907		Scholar in Latin Chester, N. Y.
Seese, Robert St. Clair B.S., 1912		Mechanical Engineering Petersburg
		Scholar in Electrical Engineering

\*On leave of absence.

- Shepherd, Queen Lois  
A.B. (*Northwestern Univ.*) 1907  
A.M. (*Univ. Wisconsin*) 1910
- Shook, Glenn Alfred  
A.B. (*Univ. Wisconsin*) 1907
- Shulters, John Raymond  
A.B., A.M., 1910, 1911
- Simmering, Siebert Luke  
B.S. (*Univ. Colorado*) 1912
- Simons, Alexander MacDougall  
B.S., 1912
- Simpson, Francis Marion  
B.S., 1909
- Smith, Orrin Harold  
A.B. (*Knox Coll.*) 1908  
A.M., 1909
- Smith, Rose  
A.B., 1911
- Smith, Vivian Thomas  
Ph.B. (*Greenville Coll.*) 1911
- \*Smith, William Walter  
A.B., B.S., 1900, 1907
- \*Snyder, Christopher Henry  
B.S., 1890
- Sonnenfeld, Harry  
B.S., M.S. (*Cornell Univ.*) 1911,  
1912
- Spangler, Mary Margaret  
A.B., 1911
- Spencer, Edwin Rollin  
A.B., 1911
- Stevens, Robert Pearman  
B.S. (*No. Dak. Agr. Coll.*) 1910
- Stewart, Charles Leslie  
A.B. (*Illinois Wesleyan Univ.*) 1911  
A.M., 1912
- Stokes, John William  
B.S., 1912
- †Strawn, Myrtle  
A.B., 1906
- Stunkard, Horace Wesley  
B.S. (*Coe Coll.*) 1912
- Sutcliffe, Emerson Grant  
A.B. (*Harvard Univ.*) 1911
- Swenson, Wilhelm Arthur  
A.B. (*Augustana Coll.*) 1912
- Taggart, Margaret Wallace  
A.B. (*Western Coll.*) 1906  
A.M. (*Univ. Wooster*) 1907
- Tagore, Rathindra Nath  
B.S., 1909
- Takaheshi, Mitsutaka  
*Tokyo Higher Technical School*
- †Tanabe, Stettan Fugta  
B.S. (*Knox Coll.*) 1911
- Tanner, Fred Wilbur  
B.S. (*Wesleyan Univ.*) 1912
- Taylor, Ward Hastings  
A.B., 1910
- Madison, Wis.*
- Philosophy  
*Urbana*  
Physics  
*Bristol, N. Y.*  
Fellow in French  
*Boulder, Colo.*  
Fellow in Mechanical Engineering  
*Chicago*  
Electrical Engineering  
*Vienna*  
Animal Husbandry  
*Corning, Iowa*
- Physics  
SS *Gibson City*  
Botany  
SS *Tower Hill*  
Education  
*Philadelphia, Pa.*  
Civil Engineering  
*San Francisco, Calif.*  
Civil Engineering  
*Johannesburg, S. Africa*
- Agronomy  
*Joliet*  
Scholar in English  
*Rushville*  
Scholar in Education  
*Mandan, No. Dak.*  
Theoretical and Applied Mechanics  
(SS) *Bloomington*
- Economics  
*Norris City*  
Fellow in Electrical Engineering  
*Albion*  
History  
*Walker, Iowa*  
Zoology  
*Plymouth, Mass.*  
English  
*Gladstone, Mich.*  
Scholar in Mathematics  
*Wooster, O.*
- Zoology  
*Bengal, India*  
Botany  
*Tokyo, Japan*  
Electrical Engineering  
*Tokyo, Japan*  
Physics  
*Warsaw, N. Y.*  
Chemistry  
*Avon*  
Mathematics

\*Candidate for professional degree in Engineering.

†On leave of absence.

- Thomas, Howard Rice  
C.E. (*Univ. Texas*) 1912
- Thompson, David Grosh  
A.B. (*Northwestern Univ.*) 1911
- Tieje, Ralph Earle  
A.B., 1910, A.M., 1912
- Tilton, Nellie Edith  
A.B., 1910
- Tohill, Louis Arthur  
A.B., 1912
- Towns, Orla Alamon  
A.B., 1912
- Tsou, Y Hsunden  
B.S. (*Cornell Univ.*) 1912
- Van Cleave, Harley Jones  
B.S. (*Knorr Coll.*) 1909  
M.S., 1910
- Van Deusen, Archibald Beebe  
B.S., 1912
- Van Zoeren, Gerrit John  
A.B. (*Hope Coll.*) 1912
- Voegelien, Lily Belle  
A.B. (*Northwestern Coll.*) 1912
- Voigt, Irma Elizabeth  
A.B., 1910, A.M., 1911
- Wakeley, Leslie Marion  
B.S., 1911
- Waldo, Edward Hardenburgh  
A.B. (*Amherst Coll.*) 1888  
M.E. (*Cornell Univ.*) 1890
- Warner, Earle Horace  
A.B. (*Univ. Denver*) 1912
- Washington, Margaret  
A.B. (*Smith Coll.*) 1912
- Watson, Minnie Elizabeth  
A.B. (*Olivet Coll.*) 1909
- Welch, Paul Smith  
A.B. (*Millikin Univ.*) 1910  
A.M., 1911
- Wellman, Orpha May  
A.B., 1911
- Wells, John Richard  
B.S., 1912
- Whitten, John Hamilton  
A.B., 1911, A.M., 1912
- Wildman, Ernest Atkins  
B.S. (*Earlham Coll.*) 1912
- Wiley, John Frederick  
Ph.B. (*DePauw Univ.*) 1902
- Williams, Guy Yandall  
A.B. (*Univ. Oklahoma*)  
A.M., 1910  
M.S. (*Univ. Chicago*) 1911
- Willson, Frank Gardner  
B.S., 1903
- Wilson, Frederick Weston  
B.S. (*Kansas Agr'l Coll.*) 1905
- Wohlenberg, Walter Jacob  
B.S., 1910
- Woodward, Paul Stanley  
B.S. (*J. B. Stetson Univ.*) 1908
- Wooters, James Ellsworth  
Ph.B. (*Blackburn Coll.*) 1908
- Austin, Texas  
Fellow in Theoretical and Applied Mechanics
- Evanston  
Geology
- SS Urbana  
English
- SS Champaign  
English
- SS Flat Rock  
History
- SS Macomb  
History
- (SS) Soochow, Kang Su, China  
Entomology  
Knoxville  
Zoology  
Chicago  
Electrical Engineering  
Zeeland, Mich.  
Chemistry  
Naperville  
Scholar in Latin  
Quincy  
Fellow in German  
Harvard  
Dairy Husbandry  
Urbana  
Electrical Engineering  
Urbana  
Physics  
Chicago  
Scholar in Entomology  
Oyster Bay, L. I.  
Zoology  
Oconee  
Fellow in Zoology  
Champaign  
English  
Harvard  
Animal Husbandry  
Castleton  
Plant Physiology  
Whittier, Calif.  
Chemistry  
SS Mattoon  
Education  
Enid, Oklahoma  
Fellow in Chemistry  
Urbana  
Electrical Engineering  
Hill City, Kan.  
Animal Husbandry  
Lincoln, Nebr.  
Fellow in Mechanical Engineering  
Louisville, Ky.  
Organic Chemistry  
Carlinville  
Education



*Worker, Joseph Garfield	Chicago
B.S., 1904	Mechanical Engineering
Wright, Albert Bayard	Wenona
B.S., A.M. (Illinois Wesleyan Univ.) 1907, 1910	Political Science
Wright, Philip Quincy	Galesburg
A.B. (Lombard Coll.) 1912	Scholar in Political Science
Wyatt, Frank Archibald	Logan, Utah
B.S. (Agr. Coll. Utah) 1910	Agronomy
Yapp, William Wodin	Urbana
B.S., 1911	Dairy Husbandry
Yensen, Trygve D	Christiania, Norway
B.S., 1907	
M.S., 1912	Electrical Engineering
Zoller, Harper Filer	Hopkinton, Ia.
B.S. (Lenox Coll.) 1911	Chemistry
Zucker, Adolph Edward	Ft. Wayne, Ind.
A.B., 1912	Scholar in German

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\*Candidate for professional degree in engineering.

# UNDERGRADUATE AND PROFESSIONAL COLLEGES AND SCHOOLS IN URBANA

(INCLUDING THE COLLEGES OF LITERATURE AND ARTS, SCIENCE, ENGINEERING,  
AGRICULTURE, AND LAW, THE LIBRARY SCHOOL, AND THE SCHOOL OF MUSIC)

## ABBREVIATIONS

### COURSES

A	Architecture	LA	Literature and Arts
AE	Architectural Engineering	Lb	Library Science
Agr	Agriculture	Md	Medical Preparatory
BLA	Business, Literature and Arts	ME	Mechanical Engineering
CE	Civil Engineering	MnE	Mining Engineering
Cer	Ceramics	MSE	Municipal and Sanitary Engineering
Ch	Chemistry	Mus	Music
ChE	Chemical Engineering	RCE	Railway Civil Engineering
EE	Electrical Engineering	REE	Railway Electrical Engineering
HSAgr	Household Science, Agri- culture	RME	Railway Mechanical Engineer- ing
HSLA	Household Science, Litera- ture and Arts	S	Science
HSS	Household Science, Science	SS	Summer Session
L	Law		

### \*CREDIT

NAME	COURSE	HOURS	RESIDENCE
Aagaard, Arthur Hildeman	ME	75	Chicago
Abbott, Helen	LA	98	Chicago
Abbott, Leland Tracy	ME		Kenmore, N. D.
Abbott, Louis Asa	Agr	68½	Morrison
Abbott, Seth David	Agr	98	Sheridan
Abney, Bertram	Agr	64½	Harrisburg
Abrams, Duff Andrew, B.S., C.E., 1905, 1909	SS		Urbana
Acer, Donald Winchester	BLA	67	Medina, N. Y.
Acer, Katherine Edith	HSLA	66	Medina, N. Y.
Adams, Eugene Franklin	AE	96	Ashland, Neb.
Adams, Joseph James	CerE	18 2-3	Rockville, Ind.
Adams, Pauline Hopkins	Mus sp		Grand Rapids, Mich.
Adams, William Calvin	ChE (SS)	71	Watseka
Adams, William Clyde	MnE	69	Chicago
Agee, Polk Watkins	A		Helena, Ark.
Ainsworth, Harry Francis	Agr	32½	Greensburg, Ind.
Ainsworth, Harry Gregory	Agr	60	Mason City
Alband, Laura	HSLA	30	Streator
Alband, Lillian May	LA	94	Streator
Albin, Harold Cornelius	Agr (SS)	61½	Washington, D. C.
Albin, John Norris	Agr		Geneva
Albrecht, Arthur Joseph, A.B., 1912	L	56	Tiskilwa
Albrecht, William Albert, A.B., 1911	Agr	130½	Flanigan
Albright, Raymond Bean	LA	66	Minier
Albright, Roscoe Harrison	CE	112	Minier
Aldrich, Harry Glen	A	172	Galesburg
Aleshire, Sarah Louise	HSAgr	62	Chicago
Alexander, Catherine Carolyn, A.B. (Univ. Michigan) 1912	Lb		Iron Mountain, Mich.
Alexander, Grace Elizabeth	SS	10	Chicago
Alexander, James Greenleaf	L		Corydon, Iowa
Alexander, John Alva	SS	98½	Mansfield
Allen, Alice Alexandria	HSLA	25	Urbana
Allen, Ernest Victor	ME	35	Pana
Allen, Frank Oscar	S	30	Clinton
Allen, Joe Graham	Agr		Washington, Ind.

\*Computed October 1, 1912.

Allen, Louis	LA	104	Clinton
Allen, Paul Glen	LA	34	Chicago
Allen, Ruben C	Agr		Montfort, Wis.
Allen, Ruby Letitia	LA	99½	Carlyle
Allhands, Cash Lyle	Agr	33½	Watseka
Allis, Fayette Henry	A	30½	Manhattan, Kans.
Allison, Carl Walter	S	99½	Olney
Allison, Jay Malcom	BLA		Downers Grove
Allison, Ruth Elizabeth	LA	32	Kirkland
Allison, Theodore Mason	LA	46	Peterson, Iowa
Almond, Harry Havens	A		Anderson, Ind.
Altpeter, Walter George	ME	42	Chicago
Alvord, Genevieve Raymond	LA		Urbana
Alyea, Thomas Elwood	A		Earlville
Amborn, Louise	BLA		Ft. Madison, Iowa
Ambrose, Arthur Samuel	Agr (SS)	58	Downers Grove
Amos, Douglas Jacques	Agr	7	Cairo
Amsbary, Harlow Aydelott	ME	71	Champaign
Amsbary, Paul Donald	A		Urbana
Anderle, Emil Joseph	Cer	71	Chicago
Anderson, Benjamin Franklin	L		Charleston
Anderson, Clarence Felix	SS	130½	Flora
Anderson, Clarence Joseph	LA	34½	Princeton
Anderson, Clarence Scott	Agr	71	Polo
Anderson, Clyde Maxwell	S	33	Camp Point
Anderson, Mrs. Electa Jeannette Wallace	LA sp		Clayton
Anderson, Isabella	LA	119 1-6	Prairie du Rocher
Anderson, John Henning	CE	79½	Rock Island
Anderson, Joshua Clayton	Agr	48½	Williamsport, Ind.
Anderson, Lillian Jean Gondoline	Mus sp		Chicago
Anderson, Owen Huntington	ME		DeKalb
Anderson, Rena	HSLA	63	Polo
Anderson, Roy William	Agr		Oregon
Anderson, Walker Whitcomb	A	34	Holden
Anderson, Walter Siegfried	CE	77½	Rock Island
Anderson, William French	Agr	33½	Lake Forest
Andresen, Hans Henry Louis	A	71	Chicago
Andrews, Chauncey Bliss	Agr	67	Chicago
Andrews, Edwin Willard	ChE	40	Joliet
Andrews, John Asa	Agr	27	Walnut
Andrews, James Burton	Agr	106	Walnut
Andrews, Mark	Agr		Birmingham, Ala.
Andrews, Peach Helen	LA	98	Macon
Andrews, Roscoe Crum	LA		Mattoon
Andrews, William Edward	SS		Pana
Andrews, William Orus	CE	115	Oak Park
Anthony, Charles Becht	A	83	Chicago
Apple, Charles Henry	CE	76	Peoria
Applegate, Albert Angelo	BLA	84	Atlanta
Applegate, Clyde Freeman	Agr	24½	Greensburg, Ind.
Applegate, Ruth Pauline	HSS		Atlanta
Arbuckle, Leon	CE		Brocton
Armington, Dorothy Maude	LA	35	Dixon
Armstrong, Clifford Oakley	ME		Bloomington
Armstrong, Della Estelle	LA	26	Newton, Iowa
Armstrong, Lenox Francois	ME	39	River Forest
Armstrong, Louise Christobel, A.B., 1912	SS		Fenton, Mich.
Armstrong, Walter Clark	Agr	38½	Chicago
Armstrong, Wayne Covert	SS	25	Newton, Iowa
Arnold, Howard Clinton	Cer	72	Chicago
Arnold, Noble	MSE	110½	Chicago
Arthur, James Merritt	Agr		Indianapolis, Ind.
Asada, Toichi James	EE	65	Tajima, Japan
Aschauer, Frank Henry	EE	32	Springfield

Asa, Alan Newton	<i>Agr</i>	46	McNabb
Ashbeck, William Louis	<i>A</i>	6	Chicago
Ashley, Lauren S	<i>L (SS)</i>		Sibley
Ashwill, Raymond Morris	<i>BLA</i>	9	Toledo
Atkinson, Albert King	<i>S</i>	106½	Chicago
Atkinson, Frederick Mortimer, Jr.	<i>LA</i>	94	Chicago
Atkinson, Harry Grant	<i>LA</i>		Mt. Vernon
Attebery, Clara Mabel	<i>HSAgr</i>	83	Hillsboro
Attebery, Homer Franklin	<i>Agr</i>		Hillsboro
Atwater, Allan Russell	<i>Cer</i>		Lugano, Switz.
Atwood, Charles Austin	<i>Agr</i>	139	Alta
Augustus, Earl Kirkwood	<i>Agr</i>	57½	Urbana
Augustus, Lalah Marie	<i>HSAgr</i>		Urbana
Augustus, Ralph Edgar	<i>Agr (SS)</i>	39½	Urbana
Austin, Barton Slade	<i>Agr</i>	34½	Woodstock
Austin, Harold Emery	<i>ME</i>	37	Chicago
Auten, John Thompson	<i>Agr</i>		White Hall
Avery, John Madison	<i>SS</i>	95½	Nashville
Avey, Daniel Morrisy, B.S., 1910	<i>BLA</i>		Mattoon
Axelson, Alice Grace	<i>S</i>	55	St. Louis, Mo.
Ayers, George Lincoln	<i>CE</i>	37	St. Charles
Ayres, Lester George	<i>EE</i>	6	Chicago
Azarraga, Francisco	<i>Agr</i>		Calivo, Capiz, P. I.
Babcock, Jennie May	<i>LA</i>		Danville
Bacher, Holland Robert	<i>S</i>	68	Bronxville, N. Y.
Back, Robert	<i>CerE</i>	147	Chicago
Bacon, Robert Hamilton	<i>EE</i>	74	Kalamazoo, Mich.
Bader, Opal Virginia	<i>SS</i>	4	Browning
Badger, Henry Stillman	<i>EE</i>	112	Appleton, Wis.
Bagusin, Alexis Matthew	<i>Md</i>		Odessa, Russia
Bailey, Charles Wilber, Jr.	<i>BLA</i>	75	Geneva
Bailey, John Willard	<i>A</i>	68	Lovington
Bailey, LaForce	<i>A</i>	35	St. Charles
Bailey, Roscoe Edward	<i>EE</i>	108	Lovington
Bailie, Robert Mills	<i>A</i>	70	Storm Lake, Iowa
Baines, Alice Elizabeth	<i>HSLA</i>	65	Urbana
Bainum, Glenn Cliffe	<i>LA</i>	96½	Paxton
Bair, William Harry, B.S., (Ohio Northern Univ.) 1908	<i>SS</i>	13	Ruffsdale, Pa.
Baird, Ethel May	<i>HSLA</i>	104	Urbana
Baird, Stacey Phillip	<i>Agr</i>	33	Peotone
Baker, Alfred Michael Mark, Jr.	<i>Agr (SS)</i>	44½	St. Louis, Mo.
Baker, Cecil Earle	<i>L sp</i>		Pine Bluff, Ark.
Baker, Gerald Clifford	<i>ChE</i>		Bement
Baker, Harry James	<i>Ch</i>		Worthington, Ind.
Baker, Russell Parks	<i>BLA</i>	27	Dayton, Ind.
Baker, Walter Earl	<i>S</i>		Bement
Baker, William Hargrave	<i>SS</i>	3	Altamont
Baldwin, Leo Starr	<i>AL</i>	71	Freeport
Baldwin, William Frazier	<i>A</i>	24	Chicago
Balkema, Salome Rose	<i>LA</i>		Chicago
Ball, George Waldo	<i>EE (SS)</i>	38½	Edison Park
Ballou, Joseph Ladd	<i>ME</i>	75	Wheaton
Bane, Frank Milton	<i>Agr</i>	18	Pontiac
Barber, Harry Truman	<i>Ag</i>	58½	Pittsfield
Barber, John Kenneth	<i>Cer</i>		LaFox
Barber, Julia Minnetta	<i>LA</i>	100	LaFox
Barber, Leslie Carroll	<i>BLA</i>	103	LaFox
Barber, Phil Chase	<i>ME</i>	86	Chicago
Barbre, Clarence	<i>Ch (SS)</i>	79	Taylorville
Barclay, Herbert Thomas	<i>CE</i>	51	Kansas City, Kan.
Barden, Harold Edward	<i>EE</i>	46	So. Pasadena, Calif.
Bardwell, Anna Laura	<i>HSLA</i>	16	Aurora
Bargh, George Holbrook	<i>BLA</i>	67	Kinmundy
Barker, Byrl Abbott	<i>Agr</i>	34	Mazon
Barker, Edward Franklin	<i>ME</i>	4	Rock Island

Barker, Muriel Gertrude	HSLA		Rockford
Barkman, Charles Pruden	LA	37	Princeton
Barlow, Ralph Linden	L		Urbana, Ohio
Barlow, Roscoe Leland	Md	29	Walshville
Barman, Somendra Chandra Deb	LA	29	Bengal, India
Barnes, Allen Littler	A	107½	Urbana
Barnes, Nelle	Mus (SS)	69	Urbana
Barnes, Otis Avery	Ch		Auburn
Barnes, Robert Olney	EE	37	LaGrange
Barnes, Russell Daniel	AE		Taylorville
Barnum, Edmund Maginnis	ME	33	LaGrange
Barnum, Richard Fyfe	ME		LaGrange
Barr, Charlotte Dexter	LA		Freeport
Barr, James Lackner	BLA	32	River Forest
Barr, Lola Rea	SS	3½	Greenville
Barreau, August Matthew	AE	35½	Bollendorf, Germany
Barrett, Edwin Galbraith	BLA		Des Moines, Ia.
Barrett, Frank Newton	Agr sp	10	Chicago
Barrick, Nellie Elizabeth	HSLA	81	Villa Grove
Barringer, Anna	SS		Hillsboro
Barrow, Ethel May	HSS	19	Wilmette
Bartells, Henry Harrison	Cer	123	Camp Point
Bartels, Nellie Flora	LA	31	Edwardsville
Barth, Edward Fred	Agr	31	Pana
Barth, Joseph Leroy	CE		Murphysboro
Bartlett, Ellen Margaret	HSAgr sp		Alameda, Calif.
Bartley, John Solomon	A		Waterloo, Iowa
Bartling, Henry Wilmont	EE	61	Litchfield
Barto, Harriett Thompson	HSLA		Urbana
Bartz, Edwin Joseph	BLA	33	Oak Park
Basadre, Federico	CE		Lima, Peru
Bascome, Bartow Strang	SS	141½	Elmira, N. Y.
Bass, Glenn Wallace	MSE	98	Walnut
Batkin, Paul Jay	L	120	Long Beach, Calif.
Batney, Zilpha Curtis	HSLA		Tiskilwa
Bauer, Arthur Archibald	Agr sp		Bunker Hill
Bauer, Harry Lloyd	Agr	72	Champaign
Bauer, Leo Michael	A (SS)	78	Horton, Kansas
Bauman, Louis Peter	Agr (SS)	97½	Springfield
Baumgarten, Arthur William	EE	74	Joliet
Baus, John Ellroy	Agr sp		Scales Mound
Baxter, Ralph Powell	Agr		Astoria
Baxter, Vaughn Butler	Agr	72½	Ottawa
Beach, Amy Adaline	LA	67	Champaign
Beach, Elinor	Mus	42	Vandalia
Beach, Francis Herman	LA		Champaign
Beal, Mrs. Edith	Mus sp		Scio, Ohio
Beal, Walter Hubert	LA		Moline
Beall, John Percival	LA	38½	Alton
Beaton, Matthew A, Jr.	AE		Chicago
Beatty, Edward Corby Obert	LA		Quincy
Beaubein, Warren Platt	AE	3	Whiting, Ind.
Beaumont, George Stanley	Agr	74	Chicago
Bebb, Edwin Adams	Agr		Chicago
Bebb, Forrest	Agr		Muskogee, Okla.
Bebb Maurice Robert	Agr	114	Muskogee, Okla.
Beckemeyer, Harvey John	SS	85 2-3	Hillsboro
Becker, Carl Valentine	ME		Springfield
Becker, Lewis Michael	ME	4	Quincy
Becker, Morris Lewis	ME (SS)	104	Chicago
Beckett, Harry Oscar	Agr sp		Stronghurst
Beckett, Joe Rand	A	70	Indianapolis, Ind.
Beebe, Christopher Keeney	ChE	61	Chicago
Beebe, Kenneth John	Agr	72½	Chicago
Beeby, Ruth Alice	LA		Urbana
Beeman, Marion Nelson	SS	52½	Lewistown
Behel, Vernon Wilbur	A		Chicago

Behrensmeyer, Helen	LA (SS)	27½	Quincy
Beindorf, Paul Albert	ME		Litchfield
Bell, Leo Richard	MnE	75	Stapleton, N. Y.
Belnap, Nuel Dinsmore	LA	71	Washington, D. C.
Belshaw, Charles Franklin	ME		Rockford
Benitz, Frank Allyn	Agr sp	19	Argentina, S. Am.
Benjamin, Harry Webb	S	61	Chillicothe
Benner, Arthur Jacob	CerE	34	Chicago
Benner, William Jacob	Cer	32	Chicago
Bennett, Hazel Marguerite	LA		Washington
Bennett, Louise Nancy	LA	65	Urbana
Bennett, William Harrison	S	56	Aurora
Bennitt, Ralph Anderson	CE (SS)	107	Chicago
Benson, Arnold Seigfrid	Agr		Batavia
Benson, Arthur Edward	A (SS)	27	Chicago
Bentley, Robert Lewis	Agr	146	Lockport
Bentz, Clarence Louis	AE	6	Chicago
Berge, Maurice Aurelius	Md	25	Ransom
Berger, Frederick Edward	A	119	Davenport, Iowa
Berger, Wallace	AE	110	Chicago
Bergland, Floyd Harrison	Agr	72	Wasco
Bergman, Frank	EE		Chicago
Bergmann, Adolph	ME	90	Chicago
Berlin, Ethel Mary	BLA	67	So. Omaha, Nebr.
Bernard, Leslie Cosby	A	87	Dayton, Ohio
Berner, Johannes Jakob	Agr sp		Berg auf Fehman, Germ.
Bernhardt, Josephine Elizabeth	LA		Collinsville
Bernhardt, Pearl Anna Maria	HSS	32	Collinsville
Berninger, Harriet Josephine	SS	15½	Mt. Carmel
Berry, Edwards Hall	EE	78	Oak Park
Berwald, Charles Harry	EE	40	Dallas, Texas
Beust, Max Charles	AE	31	LaCrosse, Wis.
Bevis, Albon Ledru	BLA		St. Louis, Mo.
Beyer, Elizabeth Gunder	SS	32	Urbana
Beyer, Vera	BLA	63	Urbana
Bicknell, Fay Helen	HSAgr	94	Lovington
Bigel, William, Jr.	Agr		Chicago
Bigler, Harry Edward	BLA	71½	Sigel
Bilhorn, Walter Edward	CE	79	Chicago
Billman, Elliott	LA		E. St. Louis
Binding, Leo Ross	Agr sp		Stockbridge, Mich.
Bingham, Arthur Barnes	Agr	33½	River Forest
Birch, Robert Featherstenaugh	LA		Geneva
Birdsall, Jessie Marie	Mus		Dows, Ia.
Birkenbeuel, Clarence Edward	EE		Peru
Bissell, George Francis	Cer (SS)	58	Winnetka
Bissell, Stanford Faulkner	LA		Chicago
Black, George William	Agr sp		Urbana
Black, Hugh Ray	ME	1	Hall, N. Y.
Black, John Earl	ME	75	Mendota
Black, Lois Frances	S		Urbana
Black, Robert Sommerville	ME		Mendota
Blackall, Alfred Harris	SS	8	Chicago
Blackburn, Earl Franklin	Agr sp		Hillsboro
Blackburn, Frederick Jackson	Agr	75½	Hillsboro
Blackburn, Robert Edwin	Agr	104½	Quincy
Blackwell, Michael Joseph	Agr sp		Armored, Ark.
Blair, Clarence Eugene	Agr sp		Danville
Blair, Hattie Mary	SS	6½	Salem
Blake, George Washington	CE	37	Maywood
Blake, Winifred	HSAgr	48	Maywood
Blakeslee, Walter Arthur	ME	101	Kansas City, Mo.
Blatherwick, Wilfred Francis	A	109	Vincennes, Ind.
Bleuel, Marie Teresa	S	39	Chicago
Block, Edward Stevenson	Agr		Chicago

# Undergraduate Students

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Bloebaum, Benjamin Harrison	L	50	St. Charles, Mo.
Bloom, Carl Wilfred	CE	43	Omaha, Nebr.
Bloom, Frederick Eller	BLA		Peoria
Blough, Earl Blaine	CE	80	Champaign
Blue, Mrs. Eleanor Baker, A.B., 1906	SS		Champaign
Blue, Harry J.	SS	5	Shawneetown
Blum, Walter Joseph	EE	77	Chicago
Bock, Paul Theodore	CE	112	Chicago
Boettiger, Louis Angelo	LA	116	Chicago
Bolander, Harold Benjamin	EE	92	Glen Ellyn
Bollman, Arthur Henry	BLA		Tuscola
Bolster, Nicholas John	CE		Mercedes, Argent.
Bonham, Martha Elizabeth	LA	99	Watseka
Bonner, Ray Fisher	Agr sp		Canton
Boone, George Ingels	Agr	48	Sidney
Boonstra, Samuel P	A	50½	LaFayette, Ind.
Booze, MacDonald Charles	Cer	69½	Sullivan
Bose, Kumudini Kauta	ME		Dacca, Bengal, India
Boucher, Cecil Francis	A	77	E. Las Vegas, N. M.
Bourassa, Reginald Pierre	A	32	Westfield, Mass.
Bourdette, Bertha Estelle	LA	104½	Montevideo, Uruguay
Bow, Loren Cushing	CerE	36	Detroit, Mich.
Bow, Warren Edward	S	71½	Detroit, Mich.
Bowen, Evalena	LA		Fruitport, Mich.
Bowen, Harry Eldridge	Agr sp		Neponset
Bowen, Harry Stephenson	AE		Seattle, Wash.
Bowers, Blanche Belle	HSLA	29	Clinton
Bowers, John Frederick	ME	31	Elmwood
Bowers, William Ray	Agr		Lanark
Bowling, Benjamin Lester	CE sp		Stanford
Bowlus, Hazel W	LA	32	Urbana
Bowlus, Marie Louise	Mus	12	Urbana
Bowman, James Loy	SS	5½	Litchfield
Boyd, Edith	LA	33	Sheffield
Boyd, Frances Josephine	LA	98	Latham
Boyd, Landon Baird	A		LaPorte, Ind.
Boyd, Lowell Thaddeus	SS	68½	Bedford, Ind.
Boye, Walter Fred	LA		St. Paul
Boyer, Walter Howard	CE	75	DeSoto, Mo.
Boyers, Bess	HSLA (SS)	95½	Decatur, Ind.
Bradley, Cedric Cory	EE	36	Westfield, Mass.
Bradley, Frank	Agr sp		Avon
Bradley, Harold Smith	AE	61	Rockford
Bradley, John Thomas, Jr.	Agr		St. Louis, Mo.
Bradley, Tobias Edward	L sp	9	Peoria
Bradrick, Lucy Center	LA	104	Farmland, Ind.
Brady, Edward Michael	CerE	32	Anna
Brainard, Fred	CE (SS)	69	Prairie Du Sac, Wis.
Branch, Nelle Uree, A.B., 1907	Lb		Champaign
Brandner, Alexander Rudolph	A	117	Chicago
Brandner, Emil George	ChE		Chicago
Brandon, Engenie Josephine	LA		Farmer City
Brandon, Joseph Franklin	Agr		Washington, Ind.
Brandstetter, Joseph Mandel	AE	86	Chicago
Brannon, George Raymond	Agr	19	Lowell, Ind.
Brannon, Herbert Franklin	L sp	31	Streator
Brant, Chauncey Hezekiah	Agr	52½	Hamilton
Brasen, Herbert Spencer	CE	85	Chicago
Bratten, Arno	SS	10 5-6	Marion
Brayton, Dorothy Mae	HSS	58½	Blue Island
Brecount, Perry	ME	36	Decatur
Breedis, John	ChE sp		Goldingen, Russia
Breedlove, Lincoln Bates	ME	92½	Martinsville, Ind.
Breining, Walter Alyn	A	74	Indianapolis, Ind.
Breitmeyer, John Fred	Agr sp		Mt. Clemens, Mich.
Breitstadt, Emma Matilda	LA		Quincy

Brennan, Wintress	LA	58	Ogden
Brenneman, Charles Gage	SS	8	Ava
Brenneman, Jacob	Agr sp		Hopedale
Brentlinger, Clell McArthur	EE		Carlisle, Ind.
Breton, John Fred	ME	81	Chicago
Brewer, Chester Wellington	S		Urbana
Brewer, George Wilson	SS	7	Louisville
Brickler, James Irven, A.B. (Hillsdale), 1894; M.S. (Univ. Michigan), 1909	Agr (SS)		Urbana
Brigham, Vernon Dee	Md		Robinson
Brinkerhoff, Verne William	ME	40	Rock Island
Bristow, George Washington	S		Metropolis
Britton, Floyd Evanston	L		Mt. Vernon
Britton, William Everett, A.M. 1910	L	28	Mt. Vernon
Broadbent, Earl Robert	ME	38	Chicago
Broadhead, William James	Agr (SS)	101½	Sedgwick, Colo.
Broadhurst, Tabitha Jayne	Mus sp		Little Rock, Ark.
Brock, Elmer Lorin	SS	7½	Jeffersonville
Brock, James Samuel	Agr	70½	Keithsburg
Brockmeyer, Edwin John	AE	112	E. St. Louis
Brodd, Lawrence Samuel	CE	39	Cambridge
Broehl, Wayne Gottlieb	BLA	69	Pana
Bronson, Roger Beckwith	BLA		Wilmette
Brooks, Elizabeth Maude	LA	65	Potsdam, N. Y.
Brooks, Ethel Isabel	HSLA		Beecher City
Brooks, Fannie Maria	HSLA	57	Saunemin
Brooks, Fred Reynolds	A	58½	Loogootee, Ind.
Brooks, George Roland	Agr (SS)	24	Paris
Brooks, Oscar Franklin	Agr	28	Paris
Brooks, Raymond Harrison	Agr		Marion
Brown, Albert Willard	EE		Tiffin, Ohio
Brown, Bayard	Agr		Genoa
Brown, Edward Sutherland	Agr	80½	Normal
Brown, Elmer Alfred	EE	79	St. Louis, Mo.
Brown, Elmer Arthur	ME (SS)	45	Urbana
Brown, Flora Maud, A.B. (Univ. Texas) 1905	Lb		San Saba, Texas
Brown, Francis Andrew	A	114	Champaign
Brown, Frank Lincoln	LA	12	Macomb
Brown, Howard Dexter	Agr	71½	Tiffin, Ohio
Brown, Irwin Tucker	Agr sp		Chicago
Brown, James Fearon	L	6	Urbana
Brown, John Bernis	ChE	31	Rock Falls
Brown, Kenneth George	LA (SS)	3	Urbana
Brown, Lelah	SS	43 2-3	Hillsboro
Brown, Lloyd Warfield	Agr sp	24	Jacksonville
Brown, Loyal Charles	Agr sp	15½	Genoa
Brown, Olive May	Mus	73	Champaign
Brown, Pembroke Holcomb	LA	33	Rockford
Brown, Robert Rea	BLA		Urbana
Brown, Russell Warden	BLA (SS)	11½	Marshall
Brown, Rutherford Hayes	Agr sp	15½	Griffin Cor., N. Y.
Brown, Waldo Reinhart	ME	31	Niles Center
Bruce, Walter Robert	LA	13	Blue Island
Bruington, Earle Vivian	Agr		Monmouth
Bruner, Crane Simpson	CE	44	Urbana
Bruner, Mary Viola	LA	97	Mattoon
Brunkow, Norman Ferdinand	LA	73	Dubuque, Iowa
Brunskill, Everett Robert	ChE	35	Pontiac
Brunson, Arthur Maxwell	Agr	124	Joliet
Bryan, Helen Gordon, A.B., 1906	Mus sp		Champaign
Bryan, Sarah Elizabeth, A.B. 1908., B.L.S., 1910	Mus sp		Champaign
Bublitz, Walter John	CE	75	Chicago
Buchanan, Richard Bell	Agr	21	Joplin, Mo.



Bucher, Ermane Gaylord	Cer	35	Pontiac
Buck, Daniel Sidney	CE	53	McLean
Buck, Odin H	ME		Oblong
Buck, Philip Eliot	CE	79	Chicago
Buck, Walter Elmer	SS	67	Beardstown
Buckler, Bruce Joseph	SS	87	Metcalf
Buckler, Carl William	SS	73	Metcalf
Buckner, Orello Simmons	Cer		Newark, N. Y.
Budina, Adolph Otto	A	78	O'Fallon
Buell, Temple Hoyne	AE		Chicago
Buelow, Paul Edward	ME		Elgin
Buerkin, Julius Allan	A	20	Quincy
Buffington, Frank Harris	EE	108	Middletown, Ohio
Buhai, Abraham Samuel	CerE		Chicago
Buhai, Michael	AE	69	Chicago
duBuisson, Johannes Petrus	S (SS)	1317	Senekal, Orange Free State, So. Africa
Bull, Maude Emily	HSAgr	32	Union Grove
Bullard, Edward Wesley	CE	105	Mechanicsburg
Bullard, Geraldine Alice	LA	77	Mechanicsburg
Bulot, Francis Henri	MSE	91	Chicago
Bumann, Albert Theodore	ChE		Litchfield, Ill.
Bumstead, Alice Amelie	HSAgr	70	Dundee
Bumstead, Whitney Vand	S		Chicago
Bunch, Mamie	HSS	80	Urbana
Bundy, John Leland	Agr		Tuscola
Bunge, Ralph William	ME (SS)	91	Chicago
Bunn, Nixon Lawrence	CE	104	Springfield
Bunting, Loyd Daniel	LA		Ellery
Bunting, Lyman Jesse	Agr	70	N. Yakima, Wash.
Burger, Howard Jean	BLA	37	Woodstock
Burgoon, David Warner	EE		E. St. Louis
Burke, Edmund Joseph	CE		Chicago
Burke, Gertrude Frances	LA		Chicago
Burke, Ralph	ME	75	Three Rivers, Mich.
Burkhart, Paul Henry	ME		Henry
Burnam, Harry Stough	L		Lexington, Ky.
Burnett, William, Jr.	EE	72	Decatur
Burnham, Marjorie Olive	LA		Paris
Burns, Ardean	Agr (SS)	40	Chicago
Burns, Charles Maley, B.S. (Knox Coll.)	L		Galesburg
Burns, Cyril Agard, A.B., 1911	L	52	Fairbury
Burns, Ella	LA		Grand Rapids, Mich.
Burns, Franklin Barnhart	BLA	86	Grand Rapids, Mich.
Burns, Owen McIntosh	LA		Danville
Burrell, Thomas Henry	AE		Albion
Burstrom, Stephen William	EE	1307	Albion, Idaho
Burt, Ruth Cornelia	LA sp		Savoy
Burnnett, Reid Albert	EE		St. Louis, Mo.
Burton, Henry Frazee	SS		Vincennes, Ind.
Burwash, Clarence Fletcher	Agr	1167	Champaign
Burwash, Lois Irene, A.B. 1906, A.M., 1907	SS		Champaign
Burwash, Mabel Estella	LA	120	Champaign
Burwash, Mary Gladys	LA	102	Savoy
Burwash, Ralph Samuel	ME		Champaign
Burwash, Thomas Clifford	BLA	59	Champaign
Busey, Harold Karcher	Agr sp	21	Danville
Busey, Josephine Katherine	LA (SS)	27	Urbana
Busey, Nora John	Mus	23	Urbana
Busey, Mrs. Verna Kerker	Mus	1257	Urbana
Bush, Frank Avery	BLA	25	Peoria
Bush, Kenneth Burman	CE	72	Quincy
Busick, Elinor Katherine	SS		Belleville
Busse, Henry Herman	BLA (SS)	22	Chicago

Butler, George Howland	CE	41	Chicago
Butler, Gordon Hubert	SS	8½	Scipio, Ind.
Butler, Jewell Cecil	EE	74	Havana
Butler, William Glenn	Agr (SS)	73½	Cairo
Butt, Harley Marion	CE	75	Gilson
Buttonmaker, Mark Adolph	Cer	64½	Chicago
Butzer, Byrdie Blye	HSLA	31	Hillsdale
Butzer, Verna Viola	HSLA	39	Hillsdale
Butzow, Emma Bertha	LA	16 2-3	Wellington
Buxton, Stanley Gerald	Agr	13½	Wingate, Ind.
Buzick, James Clive	BLA	59	Champaign
Bye, Herbert William	L		Chicago
Byrne, Harriet Anne	HSS		Chicago
Byrne, Helen Cecelia	LA (SS)	111-2-3	Chicago
Cade, Albert Frederic	BLA	32½	Belle Fourche, S. D.
Cadieux, Josephine Louise	SS	7	Chicago
Cadle, Chester Junius	LA		Charleston
Caule, Hubert Atwater	ME		Westfield, Mass.
Cahalen, Joseph Deming	ChE	23	Lenoxdale, Mass.
Caldwell, Lloyd Raymond	Agr	33	Neoga
Caldwell, Reginald Alexander	Agr sp		Chicago
Campbell, Arthur Harvey	AE	102½	Macomb
Campbell, David Joseph	LA	17	Urbana
Campbell, Florence Maud	LA		Tolono
Campbell, Grace Amelia	LA	91	Urbana
Campbell, Horace Leslie	Agr		Tallula
Campbell, Mary Anabel	HSLA		Albion
Campbell, Mildred Elizabeth	LA	27	Decatur
Campbell, William Briggs	LA	5	Tucson, Arizona
Canfield, Ruth Mae	LA	93	Holton, Kansas
Cannady, Will M., Jr.	L	57	Danville
Carey, Russell Conwell	EE		Pittsfield
Carlisle, Donald Thompson	BLA		Elgin
Carlsen, Arnold Willmore	AE	35	Chicago
Carlson, Carl Bernard	CE	41	St. Charles
Carlson, Carrie Esther	LA		Chicago
Carlson, Lee Russell	EE		Clarence
Carlson, LeRoy	Agr		St. Charles
Carmichael, Wilbur Jerome	Agr	110½	Rochelle
Carney, Clara Kathleen	HSAgr	32	Marseilles
Carney, Mary Vance	LA (SS)	68	Marseilles
Carpenter, Charles Kneeland	A	35	Faribault, Minn.
Carpenter, Jay Ira	Agr		Rochelle
Carpenter, Lewis Moffit	SS	54½	Peoria
Carpenter, Osie Edith	SS	8	Muncie, Ind.
Carpenter, Thomas Earle	BLA		Keokuk, Iowa
Carr, Vernon Wesley	BLA		Denison, Iowa
Carr, William Charles	Agr	112	Chicago
Carrell, Elvey Franc	Agr		Chicago
Carrier, Adela Pauline	Mus	71	Urbana
Carrier, Gerald Vincent	BLA	65	Urbana
Carroll, Frank Emil	BLA		Atwood
Carroll, Franklin Otis	REE		Benton
Carroll, Lee Joseph	BLA	35	Chicago
Carruthers, Mary	HSAgr	16	Ava
Carter, Alice	HSLA	34	Irvington, Ind.
Carter, Isaac Ray	LA	71	Rossville
Carter, Truman Post	SS		Jacksonville
Cartwright, Sara Blanche	HSS	123	East Alton
Cartwright, Victor Harold	S (SS)	123	New Harmony, Ind.
Cary, Willie Ready	LA		Chicago
Case, Flora Margaret, A.B., 1912	Lb	40	Urbana
Case, John Ruggles	Agr	102	Chicago
Casey, Sylvia Nevada	Mus sp	28	Woodstock
Cash, Madia Alice	SS	8	Greenup
Casner, Sidney	LA	71	Chicago

Cass, Elizabeth Henrietta, A.B., 1912	Lb	55	Mt. Vernon, Wash.
Casserly, Joseph Bernard	Agr	41	Champaign
Cassidy, Holland Mullikin	L	26	Flora
Cassingham, Florence Adelaide	LA	102	Champaign
Casteen, John Carlos	Agr		Versailles
Casteen, Marie Louise	SS	7	Versailles
Castillo, Carlos Castelazo	RCE (SS)	5½	Queretaro, Mexico
Castle, Russell D V	Cer		Urbana
Caswell, Omar	SS	2½	Mascouta
Cate, Huber Arthur	Agr (SS)	117½	Champaign
Cater, Sumner Harris	Agr		Princeton
Cathcart, Robert Irl	ME	30	Deland
Cattron, Conrad Lee	Agr	101½	Ellisville
Cattron, Thomas Hezekiah	EE	118½	Fairview
Chambers, William Harold	Agr	36	Evanston
Chand, Hari	EE (SS)	22	Punjab, India
Chang, Yun-din Chinzun, B.S., 1912	SS		Shanghai, China
Chantrey, Frederick Arthur	ME		Lake Forest
Chapman, Edward Neal	ChE	28	Chicago
Chapman, Howard Alonzo	EE		Warrensburg, Mo.
Chapman, Ralph Dwyer Clinton	BLA	40	Vienna
Chapman, Raymond Stallwood	Agr		Chicago
Charni, Frederick Neal	A		Brookville, Ind.
Chartrand, John Baptist	EE	28	E. St. Louis
Chase, Clarence Calvin	ME		Buda
Chase, Dean	MSE (SS)	81	St. Louis, Mo.
Chase, John Albion	CE		Urbana
Chase, Katherine Trusdell	LA	70	Rock Island
Chase, Russell Leon	Agr		LeRoy
Chatten, Carney Edward	S		Flora
Chatterjee, Brahma Nath	Agr (SS)	100½	Allahabad, India
Chatterton, John Lanphier	LA		Springfield
Checkley, Joseph Harvey	Agr	106	Mattoon
Chen, Huang	ChE	124	Kwong Chow, China
Chen, King Yaou	Ch	106	Shanghai, China
Chenoweth, Homer Eldon	S	102	So. Charleston, O.
Chesnutt, Ralph Cookman	ME	106	Chicago
Chesrown, Leo Morello	ME	75	Olney
Chew, Dorothy	HSS	24	Pueblo, Colo.
Chien, Sung Shu	S (SS)	78	Shanghai, China
Chipps, Paul L	Agr	50	Sullivan
Christensen, Erwin Ottoman	A		Chicago
Christianson, Oliver Arthur	A	15	Crookston, Minn.
Christopher, Arthur Bailey	Cer		Canton
Christopher, Bessie Fern	HSAgr	62	Auburn
Christy, Glen	EE	64	Harrisburg
Chu, Co-Ching	Agr	108½	Shoa Hing, China
Chu, Vee Gih	ChE (SS)	124	Shanghai, China
Chuang, Tsin	AE (SS)	98½	Shanghai, China
Chubbuck, Judson Elson	EE		Gibson City
Chumley, Edith Bland	SS	19½	Springfield
Churchill, Clarence Farnsworth	S	117½	Chenoa
Churchill, James Errol	EE	75	Mt. Carmel
Claar, Elmer Allen	LA	31	Moline
Clafin, Stephen Thurston	S	59	Lombard
Clapp, Howard Campbell	L		Danville
Clapp, Perry Gibson	Agr sp		New Albany, Ind.
Clare, William Henry	A	123	Glen Ellyn
Clark, Chester Arthur	Agr	71	Carthage
Clark, Clifton Wirt	S (SS)	96	Chicago
Clark, Ernest McChesney	Agr (SS)	113½	Long Beach, Calif.
Clark, Harold Edward	Cer		Sterling
Clark, Harold Turner	BLA		Champaign
Clark, James Russell	A	28	Urbana
Clark, Meribah Eliza	LA	78	Mt. Sterling

Clark, Rena	SS		Terre Haute, Ind.
Clark, Roscoe Perry	ME sp		Enosburg Falls, Vt.
Clark, William Otis	Agr		Chrisman
Clarke, David Roland	LA	67	Urbana
Clarke, Ethel	HSS (SS)	103	Noblesville, Ind.
Clarke, George Edward	EE		Noblesville, Ind.
Clarkson, Albert Jay	EE	35	Champaign
Clausen, Clara Alice	LA	31	Secor
Clausen, Elizabeth Johanna	HSAgr	48	Chicago
Claussen, Arthur William	ME	106	Riverdale
Clawson, Kenneth Raymond	A	30	Atlanta
Clayberg, Dorothy Marion	A		Oak Park
Clayberg, Harold Dudley	S	100	Oak Park
Claycomb, Edward Denman	Agr	19½	Sycamore
Clegg, Isabel	HSAgr	56	Ottawa
Cleghorn, Lelia Belle	LA	76	Kankakee
Clements, Olen Robert	LA	68	W. Union
Clemons, Lewis Taylor	S	34	Paw Paw
Clendenin, Adda May	LA	35	Sparta
Clendinen, Henry Clary	LA		E. St. Louis
Climer, Mary Ella	S	67	Palestine
Cline, Irl Reuben	CE	36	Medora
Cline, Lawrence Albert	CE	75	Marion
Clover, Charles William	Agr		Clinton, Ind.
Clover, Ira Newton	MSE	34	Gardner
Clyman, David	A	36	Chicago
Clyne, Kathleen Marcella	LA	108	Maple Park
Coady, Catherine Gertrude	Mus sp		Champaign
Cobb, Ernest Williams	ME	4	Chicago
Coburn, Mildred Leann	SS	8	McLean
Cochran, Charles Blake	AE	28	Marion
Cochran, Everett Lynn	A	26	Flora, Ind.
Cochran, Harry Rusling	ChE	111	Sterling
Cockrell, Francis Marion	EE (SS)	85½	Marshall
Codlin, Harry Lilsworth	Agr	66	Wauke, Iowa
Coe, Helen Louise	S	31	Springfield
Coffey, Elmer Washburn	EE	105	Blue Island
Coffey, George Cleveland	L		Wayne City
Coffey, Hazel Belle	LA	62	Blue Island
Cogdall, Harry Frank	Agr	35	Chicago
Cohn, Alexander	Md	69½	Chicago
Colbert, Harold Leland	Agr sp		Washington, Ind.
Colbert, James Rubin	LA	66½	Fairfield
Colbert, Tel Eli	SS	15	Washington, Ind.
Colcord, Frank Maynard	Agr (SS)	58	Greenville
Cole, Guernsey Hill	EE (SS)	119½	Pittsburg, Pa.
Cole, Hugh Leon	Agr (SS)	47	Geneseo
Cole, Robert McFarland	ChE	100	Glenview
Coleman, Henry Clay, Jr.	ME		Greenville
Coleman, Oren	SS	9½	Carterville
Colescott, Leia Hazel	SS		Fowler, Ind.
Collins, Mrs. Emma Moss	Agr sp		Chicago
*Collins, Sherwin Moss	Agr		Chicago
Collison, Louis Glenn	BLA		Champaign
Collom, Isabel Eva	HSLA	67	Urbana
Collom, Mary Elizabeth	HSS	35	Urbana
Colombo, James Henry	BLA	94	Herrin
Colson, Harold Edward	Agr	31½	St. Charles
Colton, Russell Smith	MSE	38	Kansas City, Mo.
Colvin, Jay Austin	BLA	95	Chicago
Colwell, Miles Gilbert	ME	53	Wyoming
Combe, Eleanor Marie	LA	108	Highland
Comstock, Daniel Franklin	BLA	44	Evanston
Comstock, Helen Bell	HSLA	64	LaGrange
Conboy, Lourde Joseph	EE	73	Sterling

\*Deceased.

Conderman, Julian Caleb	EE	16	Chicago
Condit, Olive Ferne	S		Ludlow
Condon, Margaret Adele	LA	33	Sheffield
Conefry, Hal Wyman	LA	31	LeRoy
Conklin, Paul Stanley	ME		Roscoe
Conley, David Oris	Md		Streator
Conley, Josephine V	LA	102	Streator
Conner, Richard Henry	BLA		Heriot Bay, B. C.
Connors, Stephen Wilfred	Md	32	Monroe, Wis.
Conrad, Cassius Bannister	BLA	91	Sycamore
Conrad, Orien Ray	SS	16	Vandalia
Consoer, Meta	LA	103	Oak Park
Cook, Austin Clarence	Agr sp	14	Iron Mountain, Mich.
Cook, Eugene	CE (SS)	2½	Odin
Cook, James Fitchie, B.S., 1903	SS		Elgin
Cooley, Harry B	AE	115	Chadron, Neb.
Cooley, Norma	SS	141	Maywood
Coolidge, Edwin Ray	EE	108	Winnebago
Coolidge, Richard Newell	CE	36	Lead, S. D.
Coolidge, William Anderson, Jr.	Agr		Helena, Ark
Cooper, Cedric Leslie Muriel	S	25	E. St. Louis
Cooper, Charles Edward	Agr		Carlisle, Ind.
Cooper, David William	EE		Astoria
Cooper, Delmar Gilbert	CE		Hoopeston
Cooper, Edward Alden	ME	32	LaGrange
Cooper, Kenneth Lupton	CE (SS)	45	LaGrange
Cooper, Percy Fenimore	ME	64	Waldron
Cooper, Verna May	LA	34	Moline
Cope, Walter Allen	Agr	102	Tonti
Copenhaver, Murray	Agr	112	Polo
Copley, Beatrice Virginia	LA	41	Joliet
Corbly, George Youle	Agr sp	33	Urbana
Corbly, Lynn	L (SS)		Urbana
Cordell, Vail	LA (SS)	71	Macomb
Corke, George Raymond	EE	108	Evanston
Corley, Howard	CE	108	Decatur
Corley, Seymour	ME	36	Decatur
Cortis, Frederic Boyden	LA	103	Hinsdale
Corzine, Clorah Eleen	SS	4½	Janesboro
Corzine, Harland Winn	EE	138½	Charleston
Costar, Lloyd	Agr	106	Chico, Calif.
Cotter, Roscoe Sherman	Agr sp		Oak Park
Coultas, Florence Avis	La	60	Sycamore
Coultas, Wilron James	Agr sp		Winchester
Courtney, Griffie Green	SS	7	Marion
Courtney, Martha Elizabeth	SS	6½	Mt. Vernon
Coutant, Albert Francis	SS	5	Brooklyn, N. Y.
Covey, Arete Caroline	LA	71	Farmer City
Covey, John Ellsworth	Agr	5	Bloomington
Cowan, Adair	Agr sp		Mt. Vernon, Iowa
Cowan, Percy	BLA		Chicago
Cowgill, Clinton Harriman	A	30	Topeka, Kans.
Cox, Anna Ethel	LA (SS)	81	Sandwich
Cox, Claude Gaylord	Agr	43½	Macomb
Cox, Don William	CE		Vandalia
Cox, Joseph Gilroy	BLA	32	Little Rock, Ark.
Cox, Rex Warfield	Agr	71½	Bement
Coyle, Cassius Marcellus	S		Gridley
Crabb, Warren Willis	Agr	55½	Delavan
Craft, Glenn Ewing	Agr	59	Burlington
Craig, Edward Eugene	EE		Medford, Mass.
Craig, Harold Gerrond	Agr sp		Neposet
Craig, Hazel Iona, A.B., 1910	Mus	231	Champaign
Craig, James Orville	ME		Carthage
Craigmile, Charles James	CE	107	Rantoul
Craigmile, Charles Samuel	EE	79	LaGrange

Craigmile, Mary	SS	7½	Rantoul
Crain, Chester McElfresh	BLA	54	Champaign
Crane, Dudley Winthrop	Agr		Montclair, N. J.
Crawford, Chalmers	Agr	35	Pontiac
Crawford, Harold Hamilton	A	137	Rochester, Minn.
Crawford, Helen Lucile	S	29	Shawnee, Okla.
Crebs, John Powell	Agr		Carmi
Creighton, Edward Woodin	Agr	38	Fairfield
Creighton, Mary	LA	26	Fairfield
Creighton, Mary Elizabeth	Agr (SS)	17½	Phoenix, Ariz.
Cressner, Ford Scott	BLA		Plymouth, Ind.
Criss, Edward	SS	12½	Chambersburg
Crissey, Sumner Ellis	Agr sp		Galesburg
Chr.st, Edward Bernard	ME	110	Summit
Crittenberger, George Dale	LA	69	Anderson, Ind.
Croak, John Elmer	CE		Decatur
Croce, Michele Francesco	Ch (SS)	100	Pauni-Faggia, Italy
Croll, Hilda Marion	HSLA		Beardstown
Croll, Paul Revere	Ch	107	Beardstown
Cromwell, Myrtle Cornelia	HSLA		Parkman, Ohio
Cromwell, William Foree	S	28	Frankfort, Ky.
Cronk, Clara Gladys	HS Agr	68	Aurora
Crooks, Harold Fordyce	ME	118	Chicago
Crosby, Henry Fay	Agr sp	15	Detroit, Mich.
Crose, John Otis	Agr (SS)	62½	Thorntown, Ind.
Crossland, George Marshall, A.B., 1901	BLA	159 2-3	Sheldon
Crossland, Viola June	HS Agr (SS)	95½	Sheldon
Crow, DeWitt Smith	MnE (SS)	64	Chatham
Crow, Jennie	SS	4½	Martinsville
Crowder, Benjamin Harrison	L	62	Bethany
Crowe, Robert Burbank	A	48	Columbus, Ind.
Crowson, Edward Robert	BLA	90	Fulton, Mo.
Crowther, Sarah	LA		Chicago
Crutchfield, William	A	30	Chattanooga, Tenn.
Cruzan, Myrtle Amy	SS	19	Mattoon
Cummings, Harold Lane	BLA	30	Clinton
Cummins, Wesley Erett	L		Olney
Cunningham, Thomas Albright	BLA (SS)	98½	Rossville
Curl, Charley Edmund	ME		Paris
Currie, Nannie	LA		Loda
Currier, Donald Eugene	Agr	25	Aurora
Curry, William Levi	EE (SS)	40½	Camp Point
Curtis, Burton Tuttle	Agr		Decatur
Curtiss, George	Agr		Stockton
Curtius, Florence	HS Agr		Carrollton
Cushing, Donald Frederick	BLA	46	Champaign
Cushman, Ralph Farnsworth	Agr	9½	Sylvania, Ohio
Cuthbert, Dorothy Lucile	LA	36	Gilsum, N. H.
Cutler, John	ME	75	Pana
Cutshall, Rudolph Walter	A	91	Brazil, Ind.
Cutting, Harold Stothard	ME	37	Rockford
Cylkowski, Vincent Dominic	CE	42	Chicago
Czapler, Max	Ch	36½	Chicago
Dace, Fred Edwin	EE	74	Rushville
DaCosta, Harold Fonseca	L		Chicago
Dahringer, Homer Walston	CE	108	Waukegan
Dainty, Chester Oakley	Agr sp		St. David
Dalbey, Everett Leslie	L	57	Muncie
Dale, Hervey Miller	BLA (SS)	98	Winnetka
Dallenberg, Clarence	AE		So. Holland
Dallenbach, Grace Belle	HSLA		Champaign
Dallenbach, John Henry	EE	77	Champaign
Dalton, Meta	SS		Cleburne, Texas
Daly, Samuel Lester	A	99	Metropolis
Daly, Thistle Margaret Agnes	LA	27	Urbana

Dammers, John William	Cer (SS)	59	Chicago
Danielson, Ralph Raymond	Cer	68	Chicago
Danner, Ralph	Agr sp		Astoria
Danz, Harry Otto	ME	75	Peru
Dare, Harrison Newell	LA		Danville
Darrah, Howard Alexander	Md	23	Champaign
Darrah, Juanita Elizabeth	S	103	Champaign
Dass, Banesvar	ChE		Bengal, India
Dasso, Luis	A		Lima, Peru
Dauberman, Margaret Lucile	LA	31	Mansfield
Daugherty, Hale Plahn	BLA (SS)	69	Peoria
Davidson, Allen Mayer	CE	2	So. Bend, Ind.
Davidson, Mayme	SS	3½	Marshall
Davies, Raymond Evan	Md	66	Bement
Davis, Allen Winslow	Agr	104	Maywood
Davis, Chester Emmons	Agr sp	11½	Urbana
Davis, Chester Watson	Agr	111	Holton, Kans.
Davis, Clara Elizabeth	Mus		Urbana
Davis, Edward Chester	S		Holton, Kans.
Davis, Miss Frank Harris	Agr sp		Vincennes, Ind.
Davis, Harry Roscoe	A		Anna
Davis, Mallie Leona	LA	100	Fairmount
Davis, Paul Newhall	Agr	30½	Arlington Heights
Davis, Rupert Foster	S		Atlanta, Ga.
Davis, Samuel Sylvester	Agr	41	Newport
Davis, Thomas Andrew	CE		Bethany
Davis, Thatcher Frank	Agr	31½	St. Louis, Mo.
Davison, Ruth Leone	LA	97	Marshall
Dawson, Francis Anderton	MSE sp		Reynolds
Dawson, Helen Mamie	LA	32	Morris
Dawson, Sallie	SS	7½	Marshall
Day, Anna Edith, A.B., (Illinois Coll.) 1907, A.M., 1908	SS		Jacksonville
Day, Phillmer Wymond	ChE (SS)	105	Indianapolis, Ind.
Deakman, Homer Ward	CE	37	Chicago
Dean, Beatrice Earle	LA (SS)	7	Harrisburg
Dean, Olive Gertrude	LA		Harrisburg
Decker, Benjamin Harrison	EE	33	Brazil, Ind.
Decker, Dorothy Mary	LA		Urbana
Deets, Harold Burton	Agr	89½	Galesburg
DeForest, Lemuel	ME	80	Toledo, Ohio.
Degen, Albert Gustav	AE		Kansas City, Mo.
Deiss, William Charles	EE	27	Carlinville
DeLong, Willard Earl	BLA		Foosland
DeLony, Lawson Leonard	A	68	Little Rock, Ark.
Demerath, LeRoy	ME		Kewanee
Demlow, Lester Christopher	SS		Champaign
DeMott, Roy VanLiew	BLA	63	Crookston, Minn.
Dempster, Charles	ME		Chicago
Demuth, Jack Erwin	CE	43	St. Louis, Mo.
Denison, Sidney Alexander	SS	8	Keokuk, Iowa
Denney, Helen Ruth	HSLA	13	Aurora
Dennis, Mabel Evangeline	LA	24	Maywood
Denny, Maude Aroma	Mus	67	Lincoln
Denz, Raymond Edward	LA		Decatur
Derby, Sylvester Randall	EE	37	Morgan Park
Detering, Oscar Casper	BLA	26	St. Louis, Mo.
Devine, Herbert	ME	75	Ishpeming, Mich.
Dewey, Ritchie Park	BLA	20	Rockford
Dewey, Vivian Persis	HSLA	61	Kenosha, Wis.
Dexter, Grace Ella, A.B., 1911	LA		Urbana
Dexter, Lulu Belle	LA	113	Urbana
Dibell, Harry Charles	BLA		Wolcott, Ind.
Dick, Willis Elmer	ChE	28	Quincy
Dickerson, Earl Burrus	LA (SS)	91	St. Louis, Mo.
Dickey, Ruby	HSAgr		Sparta
Dickhut, Sherrill Edward	AE		Quincy
Dickinson, Ruth Marguerite	HSAgr	48	Sidell
Dickson, George Thornton Francis	S		St. Louis, Mo.
Dieckmann, Thomas Wilbur	EE	73½	Wagoner, Okla.

Dieppenbacher, Martha Mitchell	SS	10½	Havana
Dietmeier, Clarence Richaru	BLA		Winslow
Dietzer, Alice Margaret	HSLA	30	LaGrange
Diggs, Charles Henry	Agr		Clear Lake, Ia.
Dillavou, Essel Ray	LA	34	Champaign
Dillavou, Roscoe Clarke	L	57	Champaign
Dille, Lavinia Faye	HSAgr		Grand Ridge
Dillon, Chester Charles	S	142	Normal
Dillon, Owen O'Neil	L sp		Shipman
Dilworth, James Russell	Agr	115	Table Grove
Dingledine, Ira Wilbur	SS	112	Peoria
Dirks, Bernhard Ernst George	A	57½	Dresden, Germany
Dirst, Wendell Fletcher	Agr sp		Minooka
Dix, Earl Joseph	EE (SS)	33	Marseilles
Doane, Harry Charles	BLA	7	Newton, Iowa
Dobbins, Verne Foster	EE	40	Urbana
Dodds, Eva	LA	60	Champaign
Dodds, Lois Ellen	LA		Champaign
Dodds, Marie Marguerite	LA	51	Champaign
Dodge, Hovey Worsdell	EE		So. Bend, Ind.
Dodge, Margaret Rapelye	LA		Champaign
Doemling, Leo William	ME	19	Chicago
Doerr, Harold Francis	AE	112	Chicago
Doherty, Francis Laurence	Agr		Urbana
Doisy, Edward Adelbert	Md	80	Champaign
Dole, Ethel Mary	HSAgr	46	Manteno
Dole, Leslie Abijah	EE	108	Manteno
Domas, Justin Aloysius	EE (SS)	64	Shelbyville
Donahoe, John Thomas	EE	74	Chicago
Donaldson, Clyde Wellington	Md	43½	Springfield
Donaldson, Elyzabeth Frances	SS	100½	Urbana
Donaldson, Harold James	Agr		Polo
Donaldson, Helena Josephine	SS	2½	Urbana
Donnell, Allan Douglas	ME	37	Mattoon
Donovan, James Leslie	SS		Champaign
Doocy, Clara Louise	SS	18	Pittsfield
Dooley, Hubbard Errette	BLA	69	Rock Island
Dooley, Irene	LA		Baton Rouge, La.
Dorr, Mabery Iris	Mus		Rantoul
Dorris, Sylvanus Alpheus	SS	7½	Urbana
Dorsey, William Eugene	BLA		Robinson
Dougan, Frances Bernice	HSLA		Urbana
Dougherty, Horace Gladstone	SS	8½	Washington
Douglas, Raymond Thomas	ME	101½	Southampton, Mass.
Dow, Harvey Richard	BLA		Geneva
Downey, Durbin Ralph	EE		Sheffield
Downing, Toliver Mac	b		Macomb
Doyle, John Francis	BLA		Champaign
Dralle, Henry Edward	EE		Coatsburg
Dresser, Myron Amos	BLA		New Berlin, N. Y.
Drew, Edgar Nathan	A	110	Watseka
Drew, Mildred Evangeline	LA	21	Joliet
Drew, Nellie Blanche	HSAgr		Slater, Mo.
Droste, Louis Anthony	BLA	26	Grand Rapids, Mich.
Dubin, George Harold	A	76	Chicago
Dubin, Henry	A	39	Chicago
Dubois, Henri	Agr sp	11½	Utrecht, Holland
DuBois, Lucille	SS	8	East Peoria
DuBois, Martha Harriett	HSLA	34	Eldorado
DuFrain, Frank James	LA (SS)	68	Momence
DuHadway, Fred Alan	L		Jerseyville
Dummer, James Byron	L		Chicago
Duner, Swen	Agr	33½	Wheaton
Dungan, Cornelius Peter, Jr.	LA		Oak Park
Dunham, Lawrence Henry	ChE	34	LaSalle
Dunham, Raymond Starr	Agr	99	Chicago
Dunham, Richard	EE	37	Vinton, Iowa



Dunlap, David Woods	<i>Agr</i>	69	O'Fallon, Mo.
Dunlap, Effie Charlotte	<i>LA</i>	52	Urbana
Dunlap, Fanny, Ph.B. ( <i>Univ. Iowa</i> ) 1905	<i>Lb</i>	33	O'Fallon, Mo.
Dunlap, Francis Ellsworth	<i>AE</i>		Maywood
Dunlap, Matthew Elbridge	<i>AE</i>	67	Maywood
Dunlap, William Guy	<i>BLA</i>	56	Abingdon
Dunn, Elizabeth Moore	<i>LA</i>		Bellflower
Dunn, Wilbur Galen	<i>AE</i>	72	Onaga, Kans.
Dupuy, Genevieve	<i>HSLA</i>	32	Chicago
Durr, Samuel Abraham	<i>ME</i>		Chicago
Dutton, Marshall Simeon	<i>CE</i>	36	Oak Park
Dyar, Herbert Lee	<i>SS</i>		Low Point
Dyrenforth, Lucien Young	<i>Agr</i>		Oak Park
Dysart, Benjamin Quincy	<i>S</i>		Granville
Eade, Ben Cooper	<i>Agr</i>		Elizabeth
Eade, Gladys	<i>LA</i>	98	Elizabeth
Eales, Henry Clarence	<i>Agr</i>	97	Bloomington
Early, Recia Wilma	<i>SS</i>	4½	Tuscola
Earhart, Charles Martin	<i>A</i>	40	Chrisman
East, Bess	<i>LA</i>		Anderson, Ind.
Eaton, Rex Carr	<i>Agr sp</i>		Greeley, Colo.
Eaton, William John	<i>SS</i>	16	Vandalia
Eberhart, Myra	<i>HSLA</i>	89	Newton, Ia.
Ebersole, Elmer Tryon, A. B., 1902	<i>Agr (SS)</i>	142½	Ottawa
Eckstein, Henry Charles	<i>Ch</i>	57	Peoria
Edgar, Edith	<i>LA</i>	5½	Copenhagen, N. Y.
Edmundson, Jessie Fay	<i>HSS (SS)</i>	89½	Balbec, Ind.
Edwards, Adrian Clair	<i>LA</i>		Roodhouse
Edwards, Morgan Fred, Jr.	<i>Agr</i>		Chicago
Eggert, Glenn Hallis	<i>EE</i>		Canton
Ehrhart, Raleigh John	<i>EE</i>	108	Arcola
Eicher, Eugenia	<i>HSAgr</i>		Chicago
Eide, Alwin Clyde	<i>ChE</i>	32	Lee
Eisner, Mrs. Albert J., B.Mus., 1908	<i>Mus sp</i>		Champaign
Ekstrand, Henry Emanuel	<i>A</i>	25	Waukegan
Elbersson, Georgia	<i>SS</i>	8	Perrysville
Eliason, Rolla Jasper	<i>Agr sp</i>	41½	Zion City
Elles, Edward Charles	<i>BLA</i>	32	Herrin
Elliott, Arthur Rolana	<i>Agr</i>		Tonica
Elliott, Dana Milton	<i>Cer</i>		Matteson
Elliott, Edna Elizabeth	<i>SS</i>	18½	Savanna
Elliott, Gertrude Louise	<i>HSAgr</i>	101	Tonica
Elliott, Ivan Arvel	<i>Cer</i>	32	Crossville
Ellis, Charles Joseph	<i>LA</i>		Springfield
Ellis, Frances Irene	<i>HSLA</i>		Altamont
Ellis, George Curtis	<i>Md</i>	58	Altamont
Ellis, Harvey	<i>BLA</i>		Evanston
Ellithorpe, Lina Almeda	<i>HSS</i>		Genoa
Elmendorf, Armin	<i>ME</i>	91	San Antonio, Texas
Elston, Alexander	<i>Md</i>	138	Wheeling, Va.
Elston, Leo Weiss	<i>S</i>	100	Wheeling, W. Va.
Elton, Alexander Stuart	<i>ME</i>		Oak Park
Emigh, Hazel Lenore	<i>LA</i>	26	Knox, Ind.
Emmond, Wyatt Goen	<i>BLA</i>		LaGrange
Engle, Jeanette Morrison	<i>LA</i>	30	Urbana
Engle, Ralph Nelson	<i>Agr</i>	49	Urbana
Englis, Duane Taylor, A.B. ( <i>Eureka</i> <i>Coll.</i> ) 1912	<i>SS</i>	8	Eureka
English, Hubert Morton	<i>Md</i>	68	Urbana
English, Lloyd Hayden	<i>Md</i>	21	Chicago
Eninger, Helen Marie	<i>LA (SS)</i>	60	Cisna
Ennis, Collistus James	<i>BLA</i>	72	Chicago
Ensign, Newton Edward, A.B. ( <i>Ox-</i> <i>ford Univ.</i> ) 1908, B.S., 1911	<i>SS</i>		Urbana
Eppinger, John George	<i>LA (SS)</i>	8	Quincy

Eppsinger, Marie Anna	LA (SS)		Quincy
Epstein, Arthur Louis	MSE	105	Bloomington
Eriksen, Julia Louise	LA (SS)	53	Newark
Ermeling, Lewis Brown	ME	114	Chicago
Ernest, Ruth	LA (SS)	31½	Urbana
Ernst, Carl Paul	CE	6	Chicago
Ernst, Elmore George	A		Visalia, Calif.
Erwin, Clinton Otis	EE sp		Macomb
Erwin, Walter Boynton	BLA	30	Chicago
Eschauzier, Louis	Agr sp	25½	S. Luis Potosi, Mex.
Escobosa, Guillermo Filiberto	Agr	106	Guadalajara, Mex.
Eslick, Leo	ME	39	Lead, S. D.
Essington, Arthur Vernon	L	28	Clifton
Estes, Earl Carter	LA		Richmond, Mo.
Etherton, James Everette	L	52	Carbondale
Etienne, Leonard Arthur	EE		Centerville Station
Evans, Arthur Thompson, A.B., 1912	SS		Champaign
Evans, James Miles	LA		Chicago
Everhart, Philip Hiram	LA		Champaign
Eyman, Ralph Lee	Agr (SS)	57	Golden
Fackler, Orpheus A.	SS	8	Erie
Fackler, Walter Valentine	L		Champaign
Fagan, Ona Mary	SS	34	Pontiac
Fager, Daniel Baldwin	SS	30½	Vandalia
Fager, Frank Daniel	EE	121	Vandalia
Fahrnkopf, Emma Margaret	HSS (SS)	108	Urbana
Farnkopf, Harrison Fred Theodore	Agr	120½	Urbana
Fairbanks, Berthier Wesley	Agr		Chicago
Fairchild, Bert	Agr	26	Danville
Fairchild, Donald Hurlstone	S	24	Paxton
Fairfield, Helen	HSLA	74	Chicago
Fajardo, Euripides y M.	CE (SS)	112 2-3	S. Luis Oriente, Cuba
Fallis, Myrlin Stein	AE	70	Denver, Colo.
Fancher, Hazel Elizabeth	LA	107	Evanston
Farlow, Samuel James	AE	75½	Augusta
Farmer, Orena	LA		Belleville
Farnham, Albert Ayrton	ME		Westfield, Mass.
Farthing, Chester Harold, B.S. (McKendree Coll.) 1909	L	57	Odin
Farthing, William Dudley Paul, B.S. (McKendree Coll.) 1909	L	59	Odin
Farwell, Stanley Prince, B. S., 1907, M.S., 1910	SS		Chicago
Fasold, Miriam Rebecca	LA	2	St. Louis, Mo.
Fast, Clarence Mortimer	EE		Tulsa, Okla.
Faulkner, Fay Edward	S	31	Champaign
Faulkner, Leslie William	EE	74	Champaign
*Faurot, Judd Preston	EE	108	Danville
Faurote, Guy Columbus	A	35	Niles, Mich.
Fedde, Ruth Catharine	HSLA	22	Peotone
Fehrman, Claribel	S	117	Pekin
Fehrman, Florence	LA	32	Pekin
Feldman, Joseph Elmer	Agr	31½	Morrison
Felger, Walter Blaine	ME (SS)	36	Milmine
Feller, George Capron	CerE		Kansas City, Mo.
Fellows, James Daniel	BLA	42½	St. Charles
Felmley, Mildred Helen	LA	103	Normal
Felter, Mary Emma	HSLA		Eureka
Ferguson, Clarence Milford	A	34	Charles City, Ia.
Ferguson, Cleveland Frank	Agr		Annawan
Ferguson, Florence Roxana	HSLA		Annawan
Ferguson, Jean May	SS	22	Chicago
Ferguson, Louis Smith	ME	125	Annawan
Fernandez, Carlos S	Agr	31	Chihuahua, Mex.

\*Deceased Oct. 1, 1912.

Ferrell, Cyrus Porter	EE		El Paso
Ferrell, Dent	EE (SS)	113½	Cartersville
Ferrell, Raymond Pola	Md	27	Harrisburg
Fetherston, James Edward	Md (SS)	20	Chicago
Fetherston, John Moffat	EE (SS)	74	Chicago
Feutz, Frank Christian	CE	74	Olney
Fickett, Elizabeth Dean	HSLA		Chicago
Field, Roswell Francis	S	50½	Port Lavaca, Tex.
Fielder, William Fuller	S	83	Chicago
Fienhold, William	Agr	60	Pontiac
Fiero, Elmer Ellsworth	LA (SS)	69	New York City
Fifield, Clarence Eugene	LA		Urbana
Finfrock, Chancy Lawrence	L (SS)	15	Urbana
Finn, Edmund Matthew	AE		Lawrence, Mass.
Finney, Stella Belle	SS	7½	Bismark
Firebaugh, Richard David	EE		Robinson
Fischer, Ferdinand August Paul	AE	147½	Chicago
Fischer, Henry Laurence, A.B. (Wheaton Coll.) 1910	ME (SS)	134	Wheaton
Fischer, Walter Rathfon	Md		Chicago
Fish, Julian Lorensbury	Agr	33	Chicago
Fisher, Abigail Eliza	LA	50	Geneseo
Fisher, Benjamin Sidney	L	52	Anderson, Ind.
Fisher, Erwin	BLA	6	Chicago
Fisher, Eva Josephine	LA	88	Champaign
Fisher, Helen Vastine	LA		Geneseo
Fisher, Walter Lloyd	RCE	92	Union City, Ind.
Fishleigh, Gladys Ryder	LA	60	Chicago
Fisk, Roy Vincent	Agr sp		Prophetstown
Fitzgerrell, Sylvester Stanton	Agr		Benton
Fitzpatrick, James Charles	CerE	27	Bessemer, Ala.
Fleck, Arthur William	A	6	Indianapolis, Ind.
Fleig, Frederic Raymond	BLA	60	Belleville
Fletcher, Charles Harrison	L	54	Ridgefarm
Fletcher, John Archibald	Agr	75	Chicago
Fletcher, O Frank	LA		Ridgefarm
Flickinger, Pauline Elizabeth	LA (SS)	11	Atwood
Flodin, Harold Leo	ME	42	Chicago
Flood, Wilber Earl	CE	110	Peoria
Flowerree, Trennace	Agr	100	Easton
Fly, Vivienne Elizabeth	LA		Mt. Vernon
Fogg, Alden Knowlton	CE	37	McConnell
Fong, Gooy Yue	CE		Canton, China
Fong, Mon Charles	CE		Canton, China
Fontaine, Everett Orren	LA	34	Momence
Ford, Albert Gallatin	Agr	29½	Geneva
Ford, Edith Harley, Ph.B. (Univ. Chicago) 1910	Lb	52	Rockford
Ford, Everett Porter	ME	18	Galva
Ford, Nellie Corey	BLA	4	Rockford
Fordtran, Arthur Edmund	BLA		Blue Island
Forkey, Mildred Lillian	HSAgr		Prophetstown
Fornoff, Gustav George	EE	120	Chicago
Forster, William Edmund	Agr		Chicago
Forsythe, Lawrence Gibson	CE	1½	Kansas City, Mo.
Fort, Lyman Marion	S	101	Stronghurst
Forty, Frank Alfred	EE	37	Chicago
Foster, Donald DeVere	BLA	64	Boswell, Ind.
Foster, Edward Burdell	Agr sp	20½	Aurora
Foster, Edmond Roy	A	76	Melrose Park
Foster, Frank Ward	EE sp		Alexis
Foster, Harry Llewellyn	AE	114½	Milwaukee, Wis.
Foster, John Raymond	Agr (SS)	89	Sac City, Iowa
Foster, Ora French	Agr	71½	Paxico, Mo.
Foucht, Cecil Roy	EE		Rutland
Foulke, Claude Clifton	BLA		Worthington, Ind.

Fowler, Leland Stanford	S		Penfield
Fowler, Wiley Marion	LA	37	Penfield
Fox, David Leroy	Agr sp		Palestine
Fox, James Leslie	MSE		Englewood, N. J.
Fragoso, Gilberto	CE		Durango, Mex.
Frail, James Eddis	SS	11½	La Fayette
Frailey, Lester Eugene	LA	81	Urbana
Francis, Fred David	SS	8	Bridgeport, Ind.
Francis, Helen Elizabeth	LA		Wyoming
Francke, Hallie Herman	Agr sp	10½	Thomson
Frank, William Leonard	S	112	Carthage
Franzen, Theodore John	AE (SS)	117	Peoria
Fraser, Mrs. Alice Eaton	Mus sp		Aurora
Fraser, Reginald Simon	CE		Lead, S. D.
Fray, Disk Sylvester	CE (SS)	64	Maywood
Frazee, Anna Dora	LA	16	Mosvewaqua
Frazee, Russell Card	Agr	66½	Morris
Frazer, George Carlyle	Agr	32½	Lockport
Frazier, James B, Jr.	Agr (SS)	46	Paris
Frazier, Philip	ME	31	Aurora
Freark, Parke West	MSE		Springfield
Freels, John William	LA		E. St. Louis
Freeman, Herbert Verne	A	24	Indianapolis, Ind.
Freeman, Marie	HSS	102	Decatur
Freeman, Ruth Mae	LA	95½	Bloomington
French, Guy Russell	SS	16½	Eureka
French, Henry Helm	RME	80	Chicago
French, Ralph Waldo	Agr	63	Magnolia
Friendo, Sidney	CE		Chicago
Fritchey, Theodore Augustus, Jr.	BLA	104	Olney
Froebe, Elmer Nicholas	Agr		Chatsworth
Froehlich, Hugo Ferdinand	EE	35½	St. Louis, Mo.
Froyd, Melvin Frankford	Md	41	Paxton
Fruin, Elizabeth	HSS	101	El Paso
Fry, Albert Stevens	CE	108	Urbana
Fry, Ellwood Ray	Agr	51	Rock Island
Fulks, Harry Catlin	BLA	101	Beardstown
Fuller, Clarence Malcolm	MSE	107	Lawrenceville
Fuller, Harold Coulon	A	34	Indianapolis, Ind.
Fuller, Orville Melvin	Agr		Beardstown
Fullerton, Theron Bushnell	Agr	39	Ottawa
Fulton, Guy Chandler	A	39	Warsaw
Fulton, Roy Abbott	EE		Springfield, Mo.
Fulwider, Byron Simmons	BLA		Freeport
Funk, Frank Wilmer	Agr sp		Beverly
Funkhouser, Earl A	SS	91½	Atlanta, Mo.
Furbeck, Stanley Brooks	ME		Oak Park
Furukawa, Sozabu	A	109	Saga-Ken, Japan
Furst, Philip Carl	A		Bedford, Indiana
Gable, George Elmore	A	68	Cedar Rapids, Ia.
Gaddis, Albert Macy	EE	77	Modoc, Ind.
Gaddis, Henry Elisha	BLA	107	Modoc, Ind.
Gage, Byron Fremont	Agr sp		Seneca
Gage, John Howard	S		Texico
Gage, Marjorie Harriett	Mus sp (SS)	73½	Champaign
Gage, Robert Percy	Agr	69½	Elgin
Gallagher, Anna Marie	LA	63	Chicago
Gallaher, Harold	EE		Tiskilwa
Galpin, Stella Belle, A.B. (Knox Coll.) 1911	Lb		Galesburg
Gamble, Clare Curtiss	BLA	33	Malone, N. Y.
Gamble, Donald Tunnicliffe	Agr	70½	Kewanee
Game, Josephine Louise	SS	82	Chatsworth
Gandia, Angel Charles	Ch		Manaté, P. R.
Ganser, Alice	LA sp		Aurora
Gants, Elwyn Tracy	ME		Wenona

# Undergraduate Students

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Gardiner, John Low	ME	41	Chicago
Garrett, James Franklin	ChE	87	Kinmundy
Garrett, Louise Wallace	LA	96	Champaign
Garritson, Hillard DeWitt	BLA		Marion, Ind.
Garten, William Raymond	CE	64	Odon, Ind.
Garwin, Henry Barnette	SS		Pittsfield
Gaskill, Della Alice	HSS	68	Joliet
Gately, Frederick Wortman	EE		Chicago
Gates, Carleton Willard	EE	109	Elgin
Gates, Harriet Elizabeth	HSS	37	Chicago
Gates, Minnie Louise	Mus	11	Urbana
Gauger, Joseph Frederick	Agr		Champaign
Gauger, Marguerite Elston	HSS	103½	Champaign
Gauger, Paul Charles	AE	120	St. Paul, Minn.
Gauger, Raymond Wallace	A		Champaign
Gaut, Rosa-Lee, B.Mus., 1912	LA	130	Knoxville, Tenn.
Gay, Strawn Aldrich	A (SS)	108	Ottawa
Gayle, Robert Edwin	Agr sp		Lincoln
Gayton, Loran Delancey	CE	58	Worcester, Mass.
Gee, Claude Earl	EE	92½	Lawrence, Kans.
Gehant, Evelyn Ella	HSAgr		Dixon
Gehant, Rosalie Florence	HSAgr		Dixon
Geherty, Celeste	LA		Winnetka
Gehrig, Arthur Gustave	CE	70	New Douglas
Gehrig, Edward Franklin	ME	26	Grantfork
Geisendorfer, Karl Edward	Agr		Pittsfield
Geitner, Herman Isaac	S	32	Chicago
Gemberling, Cameron Houtz	RCE	37	So. Bend, Ind.
Gemmill, Josephine Alberta	HSAgr	32	Sparta
Gentle, George Edward	Agr	102½	Farmington
George, Leslie Godfrey	LA	28	Staunton
Gere, Helen Beatrice	HSLA	65	Urbana
Getman, Roy Lyle	CE	93	Harvard
Geyer, Grace Mildred	HSLA		Roswell, N. Mex.
Geyer, Howard Almon	Agr	26½	Rock Falls
Gibbs, Paul Hedges	ME	112	Westfield, Mass.
Gibson, Mable Helen	HSAgr	51	Woodstock
Gibson, Paul Y	Agr		Peoria
Giehler, Frederick John	AE	82	Ottawa
Giep, Lula Maud	SS	7½	Champaign
Giessler, William Carson	MSE	110	Peoria
Giffin, Cora Amanda	HSLA		Lockport
Gilbert, Irving Brown	CE	50	Champaign
Gilbert, James Harman	LA		Mt. Vernon
Gildersleeve, Mary Elsie	HSS	64½	Hudson
Gilkerson, Harry Charles	Agr	110	Marengo
Gilkey, John Ray	SS	36½	Hume
Gill, George Thallon	Agr	59	Evanston
Gillam, Winona Mayble	Agr sp		Chicago
Gilmore, Leonard Mason	Agr	20½	Moline
Gilpatrick, Gladys	HSAgr		Plano
Girhard, George M	LA	35	Newton
Glassco, Roy Thomas	Agr sp	43	Charleston
Glenn, Edgar Wilson	CE		Holton, Kansas
Glenn, Eleanor Mae, A.B., 1907	SS		Champaign
Glenz, Edward Anton	ChE	104	Chicago
Glessing, Barbara Frances	LA		El Paso
Glick, Abe LeRoy	MSE	82	Chicago
Glover, Donald Mitchell	Md		Urbana
Glover, Leonard Wood, A.B., 1912	Mus	160	Urbana
Glover, Rodney Champlin	L		Ottawa
Godehn, Reuel Ariel	AE		Moline
Godfrey, Eleanor	LA (SS)		Philo
Goebel, Irma Gretchen	LA	57	Urbana
Goelitz, William Henry	LA	24½	Oak Park
Goetz, Antoinette Helen, A.B. (Iowa State Univ.) 1906	Lb	32	Iowa City, Ia.

Goff, Arthur Clark	<i>Md</i>		Staunton
Gohn, Lloyd Elias	<i>LA (SS)</i>	119½	Rochester, Ind.
Golaberg, Philip Hilton	<i>S</i>	45	Chicago
Golden, Wesley Barton	<i>BLA</i>	33	Champaign
Golden, Waldo Emerson	<i>Md</i>	32	Champaign
Goldman, Ellis Ralph	<i>CE</i>	66	Rockford
Goldman, Rae	<i>LA</i>	84½	Terre Haute, Ind.
Gonda, August	<i>MnE</i>		Posen, Prussia
Gonsior, Albert	<i>CE</i>	79½	Chicago
Gooch, Gretchen Louise	<i>LA</i>		Bellflower
Goode, Eslanda Elbert	<i>HSLA</i>		Greenville
Gooding, Charles Wesley	<i>SS</i>	30½	Champaign
Goodman, Ezra	<i>S</i>	37	Zitomir, Russia
Goodmann, Eva Marie	<i>HSLA</i>		Champaign
Goodmann, Leola Ione	<i>HSLA</i>	65	Champaign
Goodwin, Viola	<i>LA</i>		Hot Springs, Ark.
Gordon, Raymond Hall	<i>ME</i>	36	Chicago
Gorges, Franz	<i>CE</i>	6	Chicago
Gormley, James Reilly	<i>A</i>	114	Chicago
Gould, Frank Elmer	<i>A</i>		Urbana
Gould, John, Jr.	<i>Agr</i>		Lake Forest
Gowdy, Max	<i>Agr</i>		Bloomington
Grabbe, John Christian	<i>S</i>		Urbana
Grady, Edward Maurice	<i>Cer</i>	17	Bloomington
Graham, Walter Thompson	<i>SS</i>		Kinmundy
Grant, Clarence Todd	<i>CE</i>		Elgin
Grant, Helen Winifrede	<i>LA</i>	66	Urbana
Grant, Ruth Margaret	<i>HSLA</i>		Urbana
Grantham, Esta	<i>SS</i>	15½	Stockwell, Ind.
Grantham, George Manners	<i>Agr</i>	79	New Richmond, Ind.
Graves, Perry Henry	<i>BLA</i>	29	Rockford
Graves, Roy Martin	<i>CE</i>	36	Evanston
Gray, Cora Emeline, M.S. (Univ. Chicago) 1909	<i>Mus</i>		W. Palm Beach, Fla.
Gray, John Ernest	<i>MnE</i>		Ottawa
Gray, Ruth	<i>HSAgr</i>		Des Moines, Ia.
Grayhack, John Edward, Jr.	<i>CE</i>		Joliet
Green, Alta	<i>LA</i>	33	Urbana
Green, Bertha Agnes	<i>Mus (SS)</i>	80½	Ivesdale
Green, Eulalie	<i>S</i>	27	Oakwood
Green, Florence	<i>LA</i>		Tonasket, Wash.
Green, Mrs. Ollie	<i>SS</i>		Winchester
Green, Ralph	<i>CE</i>	36	Chicago
Green, Roy Ezra	<i>Agr</i>	39½	Urbana
Greenburg, Roland Everett	<i>ME</i>	59	New Richmond, Ind.
Greene, Arthur Ritchie	<i>Agr</i>	75	Lisle
Greene, Birdie Wilma	<i>SS</i>	90½	Tallula
Greene, Joseph Nathaniel	<i>Agr</i>	30	Chicago
Greengard, Louis Jacob	<i>Agr</i>		Chicago
Greenhill, Harold	<i>ME</i>		Chicago
Greenman, Philip Ray	<i>ME</i>	37½	Pond Creek, Okla.
Greenwell, James Roland	<i>SS</i>	60	Hersman
Gregg, Richard Seaton	<i>AE</i>	112	Peoria
Gregory, Joseph VanClief	<i>ME</i>	1½	Kansas City, Mo.
Gregory, Lewis Throckmorton	<i>BLA</i>	96	Chicago
Gregory, Porter Tate	<i>EE (SS)</i>	67	Fulton, Ky.
Greison, Hans Peter	<i>BLA</i>		Savanna
Greves, George Lowthan	<i>EE</i>	148	Peoria
Grew, Charles Henry	<i>Agr</i>	32½	Chicago
Gridley, William Whiting	<i>EE</i>		Amboy
Griesbaum, Erwin	<i>ME (SS)</i>	73½	New Baden
Grieser, LeRoy Oliver	<i>Agr</i>		Quincy
Griffin, Fred Lyman	<i>SS</i>		Hall, N. Y.
Griffin, Harry Milton	<i>A</i>	24	Connersville, Ind.
Griffin, Jack Mitchell	<i>Agr</i>	20½	Evanston
Griffin, William Leroy	<i>BLA</i>	67	Atkinson

Griffith, Clarence Patrick	AE	66	Champaign
Griffith, Dickerson Francis	Agr		Chicago
Griffith, Lowell Albert	Agr sp		Champaign
Griffith, Mildred Elizabeth	LA	66	Ashton
Griftner, James Howard	MnE (SS)	73	Champaign
Grigg, Dan Ralph, Jr.	L	25	Greenville
Grignon, Gaston Wilfred	LA		Menominee, Mich.
Grigsby, Hugh	Agr		Medina, Pax., Mex.
Grissom, Ruth Leona	HSAgr	39	Armington
Griswold, George Durfee	ME	35	Chicago
Grizzell, Roy Ames	S	9½	Murphysboro
Gross, Alfred W	BLA	34	Ft. Wayne, Ind.
Grossman, Andrew Eugene	L	11	Chicago
Grossman, Donald Ashway	LA		Champaign
Grossman, Ralph Emery	AE	31	Champaign
Gratts, Walter Franklin	SS	2	Raymond
Grout, Joe Carpenter	LA	105	Winchester
Grove, Pearl Forest	S (SS)	100	Potomac
Groves, Mabel	SS	46½	Sidney
Groves, Pauline Trabue, A.B., 1911	HSS	130	Champaign
Grubb, Cyril Leona	LA		Quincy
Grubb, Sarah Maud	HSLA		Quincy
Grunewald, Augustus Henry, Jr.	Agr	38½	Chicago
Guenther, Carl Fred	Agr		Spring Valley
Gum, Harry Allen	ME	16	Marseilles
Gumm, Leslie Monroe	EE		Marseilles
Gumz, Johann Herman	AE (SS)	37	Aurora
Gunkel, Woodward William	LA		Sheffield
Gunnell, Palmer Mackenzie	L		Wichita, Kans.
Gurley, Leon Raymond	ME		Chicago
Gustafson, George Philip	BLA		Sycamore
Gwinn, Avis	HSLA	76	Urbana
Gwinn, Edith	HSLA (SS)	40½	Urbana
Haag, Curtis Eugene	ME		Plymouth, Ind.
Haag, Vernon William	Ch	31	Mazon
Haan, George William	Md		Aurora
Habbe, Richard Hartloff	LA	65	Indianapolis, Ind.
Hacker, Amanda Dimple	LA		Cairo
Hadden, Chester Gilbert	Agr		Chicago
Hadden, Stanley Bear	ME (SS)	76½	Penfield
Hadley, Floyd Britton	Agr	65	Cambridge
Hagan, Tom Angus	BLA		Champaign
Haggott, William Stiles	EE	37	Keokuk, Ia.
Hague, Edith Elizabeth, A.B. (Univ. Kansas) 1910	Lb		Kingfisher, Okla.
Hahn, Fred Charles	ChE		Springfield
Hahn, Hugo Joseph	Agr	114	Sterling
Haile, Warren Wamilton	BLA		Evanston
Haines, Bessie Judith	Mus sp (SS)	3½	Urbana
Haines, Mabel Magdalene	LA	98½	Urbana
Hakanson, Arthur Ferdinand	ChE	41	Chicago
Halas, Walter Henry	AE	42	Chicago
Halbruge, Charles Morgan	BLA		Rockfort, Ind.
Haldeman, Paul Johnson	LA (SS)	96½	St. Louis, Mo.
Haldeman, Ralph Erwin	AE		Streator
Hale, Leonard Oliver	A	28	Grinnell, Ia.
Hale, Roy Joseph	SS	98	Taylorville
Hales, George Wilfrid	Agr		Hinsdale
Hall, Harriett	Agr sp	13	St. Louis, Mo.
Hall, Lawrence Melville	EE	108	Kewanee
Hall, Lisle Gwynne	Agr	67	Peoria
Hall, Royal Glenn, A. B. (Park Coll.) 1912	SS	6	Goodman, Mo.
Hall, Russell Pritchett	Agr	61½	Niantic
Hall, Thomas Dennison	Agr sp		Ladybrand, So. Africa
Halliday, Mabel	Mus sp		Clio, Mich.

Halliday, Ruth	LA	57½	Clio, Mich.
Halliwell, Pauline	LA	31	Chicago
Halperin, Victor Hugo	LA	5	Chicago
Halterman, Henry James	ME		Anna
Hamblin, Eugene Earl	S		Decatur
Hamill, Eugene Carl	AE		Bloomington
Hamilton, Rubey James	SS	5	Kewanee
Hammer, Glenn Orville	EE	36	Morrison
Hammitt, Andrew Baker	AE	37	Des Moines, Ia.
Hampton, Ernest Byron	S		Benton
Hana, Leo Gregory	L	20	Champaign
Handke, Paul Albert	CerE	107½	Evanston
Handschin, Walter Frederick	Agr	20½	Urbana
Hanes, Ernest Floyd	LA	60	Mt. Morris
Hanes, Helen Leigh	S	65	Springfield
Hanes, Murray Samuel	AE	116	Springfield
Hanford, Charles Harry	EE		Geneseo
Hankins, Orville Gerber	Agr	90½	Champaign
Hanley, Cope Judson	LA		Rensselaer, Ind.
Hannah, Harry Ingalls	L (SS)	98½	Urbana
Hansen, Mahel Laurine	HSAgr	64	Jackson, Minn.
Hansen, Merritt Rasmus	CE	111	Chicago
Hansen, Otto William	AE	25	Chicago
Hansen, Roy	Agr	79	Rock Island
Hansen, Stanley	ME	6	Chicago
Hansen, Wilbur Martin	Agr sp		Chicago
Hanson, Leslie Carl	LA		Morris
Hanson, Roy Walfred	AE	71	Oakland, Nebr.
Harbour, Albert Stanley	ME	75	Winchester, Ind.
Hardin, William Atwater	Agr sp		Keithsburg
Harding, Albert Austin	SS	105	Champaign
Hardinger, Paul Milton	Md		Gays
Hare, Faye Charles	LA (SS)	101	Gilman
Harman, Harris Jacob	CE	75	Peoria
Harner, George Madison	Agr (SS)	102½	Urbana
Harner, Arthur Theodore Claus	BLA		Dolton
Harner, Horace Hugo	A	118	Fulton, Mo.
Harper, Edward Clarke	A	86	Enderlin, N. D.
Harper, Julia Alberta	LA	111	Urbana
Harpole, Tillman Hardy	LA		St. Louis, Mo.
Harris, Clyde Dunbar	SS	16½	Dongola
Harris, Elodia Phern	HSS		Marion
Harris, Hannah Hahn	LA		Champaign
Harris, Hannah Jewell	LA	48	Elgin
Harris, Herbert Henry	Agr	48	Cairo
Harris, Leo Gabriel	BLA		Wilton, Jct., Ia.
Harris, Lois Myrtle	S	44	Sheldon
Harris, Loretto	SS	4	E. St. Louis
Harris, Margaret Ray	LA	66	Champaign
Harris, Roscoe Conkling	ME	110	Champaign
Harris, William	SS	99½	Altamont
Harris, William Earle	Agr sp		Galva
Harrison, Ruth	LA		Morris
Harrover, Mary Agatha	SS	13½	Burlington, Ia.
Harsch, Eugene Milton	Agr	27	Peoria
Harsh, Harry Jackson	BLA		Sullivan
Harshbarger, Clara Belle	LA	102½	Arcola
Harshbarger, James Francis	SS	130	Arcola
Hart, Archie Harrison	Agr		Grand Chain
Hart, Hazel Charlotte, A.B., 1912	SS		Champaign
Hart, Herbert Earl	BLA	31	Westfield, Mass.
Hart, Myron Bishop	Agr sp	31	Kenilworth
Hart, Paul Mathew	EE	74	Clinton
Hart, William Ward	LA		Benton
Hartbank, Frederick William	BLA	24	Tolono
Harter, Earl Clark	LA	21½	Wenona
Harting, Mildred Ellen	LA	41	Alexandria, Ind.



Hartman, George Howard	EE		Atkinson
Hartman, Laura Ellen	LA	23	Wellington
Hartmann, Carl Alfred	BLA	27	Alton
Hartsock, Nellie Mae	HSLA	101	Clinton
Hartzelle, Ruth Rebecca	LA	60	Carthage
Harvey, Beulah	SS	7½	Mt. Carmel
Harvey, Ralph Frame	Agr		Indianapolis, Ind.
Harwood, Frank D	SS	20	Flora
Harwood, Herrick Hopkins	L	78	Carrollton
Hasgall, Myles Sigmund	S		St. Louis, Mo.
Hasgall, Rexford Theodore	ME	5	St. Louis, Mo.
Haskell, Frank William	EE		Sterling
Haskell, James Porter	Cer		Sterling
Hasker, Edwin Laurie	BLA	70	Kankakee
Haskett, Clarence Raymond	Ch		Oklahoma City, Okla.
Haslund, Roy Harrison	A	73	Minneapolis, Minn.
Hassig, Carl	EE		Atwood
Hatch, Alice Ruth	HSS	89	Richmond
Hatch, Walter Samuel	Agr	108	Avon
Hatowski, Elijah Robert	EE	74	Oak Park
Hattenhauer, Robert Clinton	ME		Peru
Hatton, Marcia Burrie	HSAgr	20	Champaign
Hauber, Carl	A	29	Springfield, Mo.
Haugh, Benjamin Franklin	Cer		Anderson, Ind.
Havenhill, Lillian	SS		Jacksonville
Haver, Emily Louise	HSAgr		Pueblo, Colo.
Hawkins, Emin Witherspoon	Agr		Fairmount
Hawkins, James Sumner	Agr		Marion, Ind.
Hawkins, Marjorie Deane	SS	7½	Chicago
Hawkins, Ralph Roscoe	ME	109	Palestine
Hawley, Alfred DeWitt	CE	56½	Pittsford, N. Y.
Hay, Clair Edwards	Agr (SS)	120	Ottawa
Hay, Eleanor Ridgely	BLA sp		Urbana
Hay, Henry Collins	L (SS)	50	Urbana
Hayden, Edmund Matthew	Agr sp		Elwood
Hayes, Edward Bean	SS	4	Urbana
Hayes, William Bertram	BLA	24	Champaign
Hayhurst, Paul	Agr	15	Waco, Texas
Hays, Lillian Mae	Mus sp	1 2-3	Urbana
Hayward, Jessie L	SS		Flora
Hazen, Franklin Millen	ChE		LaSalle
Headley, Francis Leo	Agr		Paris
Healy, Emmett Joseph	CE	120	Chicago
Healy, Fred Albert	Agr	36	Aurora
Healy, Wellington Carleton	L	35	Rockelle
Hearn, Alma	Mus sp	4	Grayville
Heath, Edith Mary	LA	33	Amboy
Heath, Nathaniel Pinckard	EE (SS)	109½	Chicago
Heath, Trevor Morse	Agr	25	Oberlin, Ohio
Hecht, August George	Agr sp (SS)	53½	Wellston, Mo.
Heck, Arthur Floyd	Agr (SS)	110½	New Carlisle, Ohio
Hecketsweiler, Roy Thomas	LA	36	Rockefeller
Hedgcock, John Franklin	Agr	44	Plymouth
Hedgcock, John Harrison	Agr		Plymouth
Hedrick, George Samuel	Agr		Urbana
Heflin, James Edgar	SS	9	Versailles
Hegnauer, Mrs. Lotta Alice	Mus sp		Farmersburg, Ind.
Hegnauer, Robert Lucius	Agr	112	Appleton City, Mo.
Heidkamp, Emil Nicholas	CE	105	Chicago
Heimbrot, Carl Edward	A	67	Wilmette
Hein, Mary Rachel	Agr sp (SS)	12½	Champaign
Heinzelmann, Alfred Martin	ChE	34	Aurora
Heiple, Donald Graff	BLA		Washington
Helander, Linn	Md	70	Chicago
Helfrich, Otis Loyd	CerE	76	Carthage
Helfrick, Ray Eichorn	A	36	Elkhart, Ind.
Helgeland, Lillie Isabel	LA	4	Elliott

Helm, Herbert Clarence	LA		Metropolis
Hemphill, Chester Abram	Agr	58	Jacksonville
Hemstreet, Bonfield Vance	ME		New York City
Henderson, Alexander	EE	50	Chicago
Henderson, Frank Spoor	EE	33	Sterling, Colo.
Henderson, Fred	Agr	70½	Millers Ferry, Ala.
Henion, Lora Atkins, A.B., 1907, A.M., 1911	SS		Urbana
Henline, Henry Harrison	EE	74	Colfax
Henry, Mary Anne	LA	27	Paloma
Henry, Percy Chandler	EE (SS)	90	Decatur
Henson, Ray David	LA		Johnston City
Hepburn, Thomas McDonald	CE	98	Genoa
Herbert, James John Michael	L sp		Chicago
Herbolsheimer, Albert John	Agr (SS)	109	Urbana
Herdman, Carrie Belle	S	65	Winnetka
Herdman, Margaret May, A.B., 1910	Lb	32	Winnetka
Herget, Ernest Louis	BLA		Pekin
Hermann, Edgar Paul	S (SS)	114½	Sterling
Hermann, Ralph Leroy	EE	37	Woodbine
Hermansen, Frank Alfred	BLA		Milford
Herrick, George Wirt	L	47	Farmer City
Herrick, Wayne Dayre	Agr	64½	Farmer City
Hersman, Ernest Glen	A	75	Hersman
Hess, Gailord Ray	Md	70½	Momence
Hess, Samuel Earl	ChE	21	Glasford
Hesselbaum, Caroline Elizabeth	SS	121	Aurora
Hetzler, Vaughn Glenn	Agr sp	27	Beason
Heuse, Edward Otto, B.S. (Hanover Coll.) 1900, M.S., 1907	SS		Champaign
Hewins, Melvin Edwin	MnE	12	Loda
Hey, Charles Victor	Agr sp		Polo
Heywood, Harold William	CE (SS)	73½	Chicago
Hickman, Burr James	LA	29	Urbana
Hicks, Roscoe Herman	BLA	102	Colfax
Hiebel, Leonard B	Agr		Waterloo, Wis.
Higgins, Irma May	LA (SS)		Urbana
Higgins, Max Brown	AE	77	Joliet
Hilbert, John William	CE		Chicago
Hildebrand, Arthur John	L		Rockford
Hiles, Marie Alice	LA	69	Hunt
Hill, Charles Francis	S.		Toledo
Hill, Charles Nelson	BLA	106½	Champaign
Hill, Chauncey Steavens	Agr	66	Champaign
Hill, Fred James	Cer	30	Harvard
Hill, Fanny Wilder, A.B., 1910	Lb		Champaign
Hill, John Cantwell	Agr	10	Coyoacan, Mex.
Hill, Jesse Levin	LA		Oakwood
Hill, John William	CE	73	Chicago
Hill, Lucy Belle	Mus sp	7	Champaign
Hill, Margaret Dorothy	HSAgr	39	Chicago
Hill, Roger Edward	ME		Woodstock
Hill, Stanley	S	95	Mattoon
Hill, Wilma Marie	LA	76	Dayton, Ind.
Hilling, David Curtis	SS	7½	Peoria
Hillman, Arthur Burgess	CE	64	Chicago
Hills, Louis John	MSE	36	Joliet
Himstedt, Ralph Ebner	LA		Boody
Hinman, Robert Bruce	Agr	36½	Dundee
Hinrichsen, Fred Albert	BLA	99	Davenport, Ia.
Hinshaw, Harvey Rebecca	SS	3	Oskaloosa, Ia.
Hinshaw, Hazel Elizabeth	HSLA	76	Ridgefarm
Hinshaw, Joseph Howard	L		Harrisburg
Hirschfeld, Leo Sand	A	30	Chicago
Hirschl, Jackson Edward	A	86	Davenport, Ia.
Hirt, Edward George, Jr.	A	3	St. Cloud, Minn.
Hirth, Laura Edna	HSAgr	11	Quincy

Hirtzel, Clara Lillie	SS	62½	Effingham
Hitchcock, Earl Wilkie	Agr	34	Hallowell, Kans.
Hitt, Agnes Virginia	HSLA		Herrick
Hitt, Katherine	LA	41	Chicago
Hitt, Mabel	HSLA		Urbana
Hjort, Axel Magnus	ChE	58	Chicago
Ho, Chung Ming	LA	63	Canton, China
Hocking, Clarence Daniel	Agr sp		Bone Gap
Hodgins, William Brooks	ME	77½	Little Rock, Ark.
Hoehn, Friemont John August	Cer		Carlinville
Hofacker, Olga Vera, A.B., 1911	SS		Peoria
Hoff, John LeRoy	SS	30½	Ottawa
Hoffert, Anna Catheryn	LA	33	Pekin
Hoffman, Frank Joseph	A	103½	Sharpsville, Ind.
Hoffman, John Neal	SS	59	Pesotum
Hoffman, Kay Henry	Agr sp		Copenhagen, Denmark
Hoffman, Lynden Evan	S		Harvey
Hoffman, Roy Albert	EE		Aurora
Hoffman, Reyburn Paul	A	67	St. Louis, Mo.
Hoffman, Robert William	Agr	103½	Chicago
Hofstetter, Robert	SS	5	Champaign
Hogan, Harold Eugene	ChE		Lanark
Hohman, Elmo Paul	LA		Nashville
Hohmann, Howard Christopher	EE	116	Blue Island
Hoit, Maurice Elon	Agr	31	Geneseo
Hoke, Josiah Campbell	Agr (SS)	110½	Sullivan
Holbrook, Howard Crounse	Agr	26	Oak Park
Holch, Arthur Everett	SS	137	Gilman
Holinger, Arnold Carl	A		Chicago
Hollandsworth, Blanche Louise	LA	82	Canton
Holland, Henry Walter	Agr sp	13	Highland
Hollister, Noble Parker	Agr	55	Champaign
Holloway, Doris Jean	HSLA		Detroit, Mich.
Holmburger, Max, Jr.	ME	37	Chicago
Holmes, Charles Vernon	ME		Champaign
Holt, Arthur Parker	Agr	62	Shawneetown
Holt, Emery Ford	EE	100	Shawneetown
Holton, Caryl Ames	CE	107	Sidell
Holton, Frankie Leo	LA	71½	Sidell
Homann, Ferdinand	Agr	93	Mattoon
Honer, William Arthur	A	36	Jackson, Mich.
Honnold, James Ray	Agr		Lima, Ohio
Hood, Clifford Firoued	EE	36	Cameron
Hoog, Ida	SS		Litchfield
Hoover, Isabel	LA	58	Bushnell
Hopkins, Elliott Budd	ME	82	Racine, Wis.
Hopkins, Gold Samuel	BLA (SS)	26	Champaign
Hopps, Robert Smith	CE	39½	Spokane, Wash.
Hornal, William	Agr sp (SS)	20	Urbana
Horning, Roy Arthur	Cer	70	Paris
Hornkohl, Siegfried Irving William	AE		St. Joseph, Mo.
Hornung, Martin Robert	Cer	105	Chicago
Horrell, Charles Rush	EE	108	Macomb
Horton, Claude Edward	Agr		Dixon
Horwich, Louis Julius	A	87	Chicago
Hoskins, Mary Mildred	LA (SS)	93	Norris City
Hoskins, William, Jr.	BLA	64	LaGrange
Hoskinson, Bruce Quinn	SS	30½	West York
Hoskinson, Ottes, A.B. (Christian Coll.) 1900	SS		Meron, Ind.
Hostetler, Joseph Columbus	LA	35	Decatur
Hostetler, Oliver Clinton	SS	8	Charleston
Hough, Charles Francis	Agr	34	Champaign
Hough, Helen Elizabeth	LA	96	Champaign
Hough, Waldron Henry	EE	3	Oak Park
Hoult, Geneva Frances	SS	79	Chrisman

Houser, Irma L	LA		Farmer City
Housman, John Smith	MnE	75	Canton
Houston, Margaret	HSAgr		Chicago
Howat, Walter Leonard	Cer	67	Canton
Howe, Charles Ralph	Agr		Champaign
Howe, Edward Gardinar, Jr.	Agr	65	Chicago
Howe, Harold James	L	7	Galesburg
Howe, Helen	LA	16	Indianapolis, Ind.
Howe, William Thomas	Agr	20½	Tuscola
Howell, Grace Laura	SS	6	Lewistown
Howes, Herbert Edward	Agr	74	Chicago
Howk, Charles Dean	LA	25	Momence
Howser, James Chandler	Agr	74	St. Anne
Hribal, Edward A	AE	110½	Chicago
Hsu, Tsung Han	S (SS)	68½	Shantung, China
Hubbard, Laura Mary, A.B. (Western Coll.) 1896	Lb	40	Lockwood, O.
Hubbard, Laurence Reid	CE	15	Rock Falls
Hubbard, Lucy Eleanor	HSS (SS)	95	Urbana
Hubbard, Mrs. Margaret	SS	3½	Carrollton
Hubbard, Martha Koehn, A.B., 1904	Mus		Urbana
Hubbard, William Francis	ME	24	Rockford
Huddleston, Russell McDonald	Agr		Farmer City
Huddleston, Samuel David, A.B. (Shurtleff Coll.) 1910	SS		Gillespie
Hudelson, Clyde Whittaker	Agr (SS)	92	Gooding, Idaho
Hudson, Edward George	Agr		Newton, Kans.
Hudson, Mary Gladys	LA	31	Sullivan
Huff, Marguerite Lydia	Mus sp		Urbana
Hufford, Charles Thurman	Agr sp	28	Emma
Hughes, Cecil A	Agr	69	Gays
Hughes, John Harvey	Agr	102½	Gessie, Ind.
Hughes, William Virgil	Agr sp		Palestine
Huisken, Arthur Herman	ChE	36	Chicago
Hull, Daniel Ray		100½	Orange, Calif.
Hull, Harter Barnes	BLA		Cincinnati, O.
Hull, Luenna	LA		Huron, O.
Hulteen, Henry Waldorf	AE		Evanston
Humphrey, Kenneth Blaine	EE	14	Waterloo, Wis.
Humpidge, Herbert Leslie	Agr		Chicago
Hungate, Harold Grandison	EE	59	LaHarpe
Hungerford, Charles Everett	CE	28	Loda
Hunt, Ada Eleanor	SS	133	Champaign
Hunt, Clara	Mus sp		Ridott
Hunt, Florence Jennie	HSS	25	Ridott
Hunter, James Albert	LA	100½	Peoria
Hunter, James Alexander	Agr		Frankfort
Hunter, Richard Dale	Agr		Tiskilwa
Hunter, Russell Field	S	117	Chillicothe
Huntington, Homer Irving	Agr		Chicago
Huntington, Margaret Alice	LA	30	Aberdeen, S. D.
Huntoon, Alberta	SS	7½	Canandaigua, N. Y.
Huntoon, Geneva	SS	125½	Champaign
Husband, Robert Maurice	ME	35	Litchfield
Husted, Guy Harold	Agr	24	Roodhouse
Husted, Lee A	Agr	30	Roodhouse
Husted, Margaret Elizabeth	Agr sp		Zion City
Huston, Joseph Alfred	L (SS)	83	Gibson City
Hutchins, Marjorie	Mus	29	Urbana
Huxmann, Richard Frederick	CE (SS)	125½	Urbana
Hyde, Henry Fillmore	Agr	57½	Shabbona Grove
Iddings, Vera Glee	LA		Red Oak, Iowa
Iida, Tadishi	SS	141	Tokyo, Japan
Imes, Oliver Stapp	EE		Macomb
Inagaki, Nobtaro	BLA (SS)	78½	Tokyo, Japan
Ingersoll, Charles Leon	Agr sp	14½	Worthington, Ind.

# Undergraduate Students

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Ingham, Alice	SS	9½	Cicero
Ingold, Vivian Johnson	AE	117	Appleton, Wis.
Inman, Dean Maxwell	SS		Neoga
Irvin, Stanley Pueffer	BLA		Griffith, Ind.
Irwin, Scott Broadwell	Agr		Pleasant Plains
Ivens, Aaron Ralph	SS	76½	Champaign
Jackman, Charles Harold	ME		Elgin
Jackson, Ernest Theodore	SS	7½	Odin
Jackson, Grace Janet	LA		Pueblo, Colo.
Jackson, Harold Rufus	CE		Danville
Jackson, Mabel	LA	41 2-3	Danville
Jackson, Ruth Whittier	SS	13½	Eureka
Jacob, Eda Auguste	HSLA	67½	Constantinople, Turkey
Jacobsen, Walter Herman	BLA	64	Urbana
Jalandoni, Jose Ledesma	SS	133½	Jaro, Iloilo, P. I.
James, Edward Allen	EE	37	Amboy
James, Linton Willis	Agr	33	Canton
James, Phebe Elizabeth	LA	56	Mansfield
James, Russell Louis	Agr	19½	Crystal Lake
Janson, John Moller	Ch	47	E. Orange, N. J.
Jarnagin, Robert	LA		Shelbyville
Jarvis, Rowling	EE	13	Hinsdale
Jarvis, William Bancroft	LA	30	Chicago
Jasper, Walter	Agr	34	Chicago
Jefferis, Sidney Ambrose	CE		E. St. Louis
Jefferson, John Benjamin	ME	44	Chicago
Jenkins, Albert Leo	A		Danville
Jenks, Royal Edward	SS	5	Dana, Ind.
Jenne, Charles Henry	Agr sp		Sullivan
Jennings, Carson Gary	CE		Carlinville
Jennings, Walter Wilson	LA	60	St. Elmo
Jensen, Milton Owen	BLA	30	Chicago
Jeremiah, Otis	Agr sp	20	Willisville
Jervis, Florence May	Mus	24	Champaign
Jessen, Hubert	Agr sp	25	Alto Pass
Jewett, Fred Allen	CerE		Burlington, Kan.
Jez, Leo Charles	Agr	56	Chicago
Johanning, Nora Bertha	HSAgr (SS)	36	Champaign
Johanson, Ralph Thure	BLA		St. Charles
John, Dorette Thayer	HSLA	58	Clinton, Iowa
Johns, Donald Charles	MnE		Danville
Johns, Wilford Espin	Agr	64½	Rockford
Johnson, Alice Sarah, B.L.S., 1907	LA (SS)	176½	Champaign
Johnson, Elmer Walfred	CE		Batavia
Johnson, Mae Goldie	SS	7	Basil, O.
Johnson, Harry Julius	Agr		Gerlaw
Johnson, Harvey Judd	EE	108	Sycamore
Johnson, Harold Sucese	A	46	Chicago
Johnson, Louis Samuel	Agr (SS)	49	Champaign
Johnson, Mary Fern	LA		Urbana
Johnson, Maurice Carl	ME		Omaha, Neb.
Johnson, Maynard Wayne	BLA	4	Cincinnati, O.
Johnson, Nelle Irene	LA	90	Carmi
Johnson, Radford Murray	Agr		Crossville
Johnson, Ralph Martin	LA		Peoria
Johnson, Raymond Rodger	EE		Ironton, O.
Johnson, Robert Carl	BLA	63	Pana
Johnson, Robert Eugene	EE		Lawrenceburg, Ky.
Johnson, Robert Ulysses	A	100	Chicago
Johnson, Sydney Kent	BLA	2	Norwich, N. Y.
Johnston, Clarence William Henry	EE		Pittsfield
Johnston, Dwight Irwin	BLA		Seymour
Johnston, Irving West	Agr	12½	Champaign
Johnston, Ruby Aileen	LA		Lamar, Colo.
Johnston, Vern Irle	Agr	30	Sidney

Johnston, Wilbur Russel	<i>Agr</i>	25	Illiopolis
Johnstone, Andrew John	<i>Agr</i>	102	Bloomington
Johnstone, George Rufus	<i>S</i>	96	Galva
Jones, Alexander Henry	<i>SS</i>	8	Metropolis
Jones, Darrell Clinton	<i>ME</i>		Oblong
Jones, David Robert	<i>CE</i>		Streator
Jones, Herbert Milton	<i>REE</i>	55½	Chicago
Jones, John Ryan	<i>Agr</i>	23½	Williamsville
Jones, Lloyd Theodore, A.B. ( <i>Lake Forest Coll.</i> ) 1909, M.S., 1912	<i>SS</i>		Raymond
Jones, Milton Doerr	<i>EE</i>	97	Raymond
Jones, Orion Chester	<i>Md</i>	16	Redmon
Jones, J Russell	<i>BLA</i>		Springfield
Jones, Paul Clifford	<i>EE</i>		Henry
Jones, Paul Erastus	<i>A</i>	54	Tulsa, Okla.
Jones, Robert Taylor, B.S., 1912	<i>Mus</i>	148	Vincennes, Ind.
Jones, Rupert Forrest	<i>EE</i>	108	Champaign
Jones, Walter Ortis	<i>LA</i>		Champaign
Jones, Walter Wellman	<i>LA (SS)</i>	4	Braceville
Jory, Herbert W	<i>A</i>	75	Chicago
Joseph, Ada Kathryn	<i>Mus</i>	25	Jasper, Ind.
Joy, Donald Cooper	<i>ME</i>		Jacksonville
Joyner, Mildred	<i>LA</i>		Harrisburg
Judson, Bryant Escar	<i>ME</i>	31	Evanston
Jue, Chow Quon	<i>Agr</i>	10	Canton, China
Jue, Jook Hing	<i>BLA</i>	20	Canton, China
June, Marjorie Marie	<i>HSLA</i>	31	Belvidere
Jungkunz, Louis Frederic	<i>BLA</i>		Freeport
Jutton, Emma Reed, B.L.S., 1899	<i>LA</i>	120½	Champaign
Kahlert, Thomas D	<i>Agr</i>	34½	Carlyle
Kaiser, Oscar Ambrose	<i>Ch</i>	42	Somonauk
Kamm, Rufus Maurice	<i>S</i>		Highland
Kamm, Wilbur Fred	<i>S</i>		Highland
Kan, Chen Chi	<i>BLA (SS)</i>	38	Shanghai, China
Kane, Albert John	<i>CE</i>		Geneva, N. Y.
Kane, Edwin Lyle McVicker	<i>Agr</i>		Henry
Kane, Robert Clair	<i>EE</i>		Warren
Kane, Roy Alexander	<i>A</i>	85	Sanborn, Ia.
Karcher, Frank Joseph	<i>Md</i>	76	Herscher
Karges, Henry Gilbert	<i>AE</i>	77	Evansville, Ind.
Karkow, Waldemar	<i>CE</i>	109½	Chicago
Karr, Ernest Cade	<i>Agr</i>		Seymour
Kasserman, Frederic Doty	<i>Agr</i>		Newton
Kasserman, Homer Frank	<i>LA</i>		Newton
Kastler, Randolph Cecil	<i>Agr sp</i>	61	Chicago
Kattner, Dorothea	<i>SS</i>	6½	Mt. Vernon
Katzenberg, Herman Stanley	<i>AE</i>	6	Chicago
Kaufman, George Bremner	<i>A (SS)</i>	18	Morrison, Ia.
Kaufmann, Myrtle Louise	<i>SS</i>	5½	Freeport
Kaun, Robert Ferdinand	<i>EE (SS)</i>	115	Ottawa
Kaun, Walter Valentine	<i>EE</i>	108½	Ottawa
Kavanagh, Richard John	<i>LA</i>		Peoria
Kavanaugh, Daniel Francis	<i>EE</i>	1½	Moline
Kawamoto, Tane Jackson	<i>EE</i>	28	Asaka, Japan
Kay, Charles John	<i>EE</i>	108	Aurora
Kay, George Joseph	<i>EE</i>	108	Aurora
Kazar, Jay Justin	<i>ME</i>	59	Aurora
Keefer, Ruth Farwell	<i>LA</i>	82	Amboy
Keehner, Arch Floyd	<i>CE</i>	75	Jerseyville
Keen, Frances Ford	<i>LA</i>	33	Pueblo, Colo.
Keese, Albert William	<i>Cer</i>	36	Litchfield
Keese, Frances Alberta	<i>SS</i>	4½	Litchfield
Keese, William John	<i>S</i>	24	Ishpeming, Mich.
Kehlor, James Malcolm	<i>ME</i>	38	Kenosha, Wis.
Keiser, Katie	<i>SS</i>	3	Mt. Olive
Keith, Laurence Prescott	<i>AE</i>	157½	Whittier, Calif.
Kell, Sherman Little	<i>SS</i>	45	Kell

Keller, Arthur Raymond	ME		Mt. Carmel
Keller, Florence	LA	74	Chicago
Keller, Raymond Franklin	Agr sp		Delaware, O.
Kelley, Alfred Pruden	LA		Champaign
Kelley, Francis Hugh	Agr	34	Urbana
Kelley, Henry Phillips	Agr		Elgin
Kelley, Lena	SS	16½	Danville
Kelley, Mae Elizabeth	LA (SS)	93½	Loda
Kelley, Ralph Leverett	A- (SS)	99½	Elgin
Kelligar, Zeta Eloise	LA		Pana
Kellogg, Amelia Lucinda	LA	51	Aurora
Kellogg, Chester Arthur	EE	37	Chicago
Kelly, Fred Hanford	LA		Mattoon
Kelly, Howard Walton, Jr.	Agr	30½	Normal
Kelly, Ray Andrew	Agr		Pittsfield
Kemp, Orval Alton	Agr		Waynetown, Ind.
Kendall, Clinton Dwight	BLA	24	Oak Park
Kendall, James Henry	CE	61	Oak Park
Kennedy, Hannah Ellen	LA		Pana
Kennedy, Luther Eugene	ChE	57	Springfield
Kenner, Byron Florence	ME	32	Pasadena, Calif.
Kennicott, Sylvia Adelia	LA		Chicago
Kent, Everett Frank	Agr		Gridley
Kent, Lee Carson	EE	130	Gridley
Kenyon, Frederick Newcomb	Agr	98	Peoria
Keran, Paul Clemens	L	71	Champaign
Kercher, Oscar B	CE (SS)	75	Goshen, Ind.
Kercher, Otis	Agr	69	Goshen, Ind.
Kern, Esther Allen	HSLA	60	Rockford
Kern, Evans Sherwood	Agr	101	Rockford
Kern, Edward Lester	EE		Streator
Kern, Fred	S		Clinton
Kern, Lowell Davidson	L sp	50	Watseka
Kernoll, Russell Twist	CE		Rochester
Kerr, Robert Hewston	ME		Attica, Ind.
Kerrigan, Paul Francis	S	63	Michigan City, Ind.
Kessinger, Ruth	SS	10	Litchfield
Kessler, Clarence Henry	EE	108	Kirkwood
Kessler, Raymond Blaine	L	24	Robinson
Kibbe, Kyle Albert	S		Urbana
Kibbe, Leslie Arthur	AE	58	Urbana
Kidd, Albert Eugene, Jr.	BLA	53	Chicago
Kidd, George Wilson	CE	33	Chicago
Kidd, Lilace Mazoe	LA sp		Astoria
Kilby, Hubert St.Clair	EE	78	Minier
Kile, Walter Terrence	LA	26	Paris
Kimbell, Arthur Willis	CE	108	Urbana
Kinber, Alice Emma	Mus sp		Springfield
Kincade, John Dudley	A		Kansas City, Mo.
King, Charles Stanley	EE	42	Rock Island
King, DeWitt Leonard	ME		Tonica
King, Eva Gertrude	SS	2	Urbana
King, Florence Beeson	HS Agr	83 2-3	Richmond, Ind.
King, Jeff Johnson	ME (SS)	62	Lincoln
King, Lillian May	HS Agr (SS)	98	Plymouth
King, Mark Ward	EE		Roodhouse
Kinsey, Ernest Gilmore	Agr	32½	Centralia
Kipp, Marion	Agr	21	Mineral
Kirby, Wayne Isaac	A	90	Decatur
Kircher, Armin Martin	RCE	5	Chicago
Kircher, Helmuth Julius	Agr	33	Chicago
Kirchhoff, Roger Charles	A	119	Wauwatosa, Wis.
Kirk, Bonum Lee	L	44	Carbondale
Kirk, George Godwin	Agr	65	Belleflower
Kirk, Hadden Spurgeon	LA	33	Belleflower
Kirk, Howard Safford	A	63½	Colton, Wash.

Kirkland, Annirene	LA	68	Urbana
Kirkland, Archibald Farley	A (SS)	34	Cambridge
Kirkpatrick, Charles Hubert	BLA		Lafayette, Ind.
Kirkpatrick, Earl Henry	Agr	23½	Roseville
Kirkpatrick, Frank Allen	Cer E	81	Unionville, Mich.
Kirkpatrick, Nell Ruth	HSLA	64	Moline
Kirkpatrick, Sidney Dale	ChE		Urbana
Kirkpatrick, William Stewart	CE	42	Kentland, Ind.
Kirkwood, Roger	Agr	16	Lawrenceville
Kisselburg, Bert Mills	Agr		Chicago
Kissick, Ena	HSLA		Tiskilwa
Kitterman, Robert Max	ME		Tiskilwa
Klamt, Robert Herman	Agr		Chicago
Klank, Frances Grace	LA		Camampaign
Klehm, George Charles Henry	Agr	31	Arlington Heights
Klein, Carroll Aaron	A		Davenport, Ia.
Klein, Florence	HSLA		Roachdale, Ind.
Klein, Minnie George	HSS	66	Urbana
Klein, Nancie	SS	28½	Urbana
Kleinbeck, Stella P	SS	132	Litchfield
Kleinschredt, Bernie Lloyd	Agr	65½	Morrison
Klemme, LaVon Mildred	Mus		Dows, Iowa
Klemme, Vivian Gertrude	LA		Dows, Iowa
Kline, Byron Dooley	Agr		LeRoy
Klingensmith, Paul Opher	A		Indianapolis, Ind.
Klippel, Gustav Chapin	ChE		Indianapolis, Ind.
Klontz, Clayton Wilson	SS	74½	McConnell
Klopp, Charles Gorr	CE		El Paso
Knapp, Charles Ellsworth	SS		Rushville
Knapp, Lloyd Dunaway	CE	37	Ottawa
Knapp, Martha Winifred, A.B. (Ohio Wesleyan Univ.) 1899	Lb	41	LeRoy, Ohio
Knappenberger, Harry Farrar	A	83	Macomb
Kneisly, Nathaniel McKay	Agr	63½	Guthrie, Okla.
Knemeyer, Edward Franz	A	72	Mason, Nevada
Knight, John Clement	Agr	71½	Yorkville
Knight, Paul	BLA	30	Wabash, Ind.
Knodle, Cary Lee	ME (SS)	40	Elgin
Knoebel, Wilbert George	A	34½	Highland
Knowlton, Elizabeth	HSLA	69	Urbana
Knowlton, Miriam	LA	66	Urbana
Knowlton, Philetus Clarke, Jr.	A	99	Memphis, Tenn.
Knox, Leo Melville	Agr	32½	Morrison
Knox, Leta Alice	HS Agr		Morrison
Knox, Loy J	Agr		Morrison
Knox, Otelia	Mus	30	Chicago
Knox, Raymond Kenneth	A	120	Pittsfield
Knudsen, Charles William	Ch (SS)	104	New Berlin
Kobylanski, Joseph Ludwick	AE	33	Chicago
Koch, Charles Edward	ME	36	Danville
Koch, Harvey Charles	ME	67	Cloquet, Minn.
Koehler, John	AE		Tacoma, Wash.
Koepke, Edward Robert	CE		Chicago
Kohin, Thomas Francis	ChE		LaSalle
Kohout, Jerome Francis	Ch	119	Chicago
Koll, Mary Elizabeth	HSLA		Chicago
Kollmeyer, Carl Schwartzkopf	BLA		Columbus, Ind.
Koo, Vi-Tsing	EE (SS)	82	Shanghai, China
Kopf, Frank Elexander	Ch	68	Camampaign
Koptik, George	S		Chicago
Korb, Helen Lydia	SS	8	Lincoln
Koronski, George W	SS	5	Narberth, Pa.
Korshak, Sam	A	70	Chicago
Kosters, Stuart Farnsworth	CE	117	Chicago
Koupal, Agnes R	HSLA		Chicago
Krabbe, Edward Max	EE	74	Urbana



Kraeckmann, Arthur Endres	<i>Agr</i>		Chicago
Kraeger, John Franklin	<i>Ch</i>	118	Pekin
Kramer, Charles George	<i>MnE</i>	36	Dorchester, Mass.
Kramer, Jesse C	<i>EE</i>	111	Chicago
Krebaum, Alta	<i>SS</i>		Havana
Krebs, Wilbur Edward	<i>LA</i>		Belleville
Krebs, William Samuel	<i>BLA</i>	100	Oak Park
Kriegh, Elie Spencer	<i>ME</i>		Chicago
Kritzer, Richard Walker	<i>Agr</i>		Chicago
Kromer, Carrie Adelaide	<i>LA</i>	32	Elgin
Krueger, Kurt Carl	<i>Ch</i>		LaSalle
Krueger, Otto Arthur	<i>AE</i>	36	So. Bend, Ind.
Krug, Louis Gustave	<i>ChE</i>		Chicago
Ku, Tsong-Lin	<i>LA</i>	63	Shanghai, China
Kuerschen, Albert Peter	<i>CE</i>		Carlinville
Kugler, Martin Billmire	<i>CE</i>	36	Yorkville
Kuhl, John Henry, Jr.	<i>AE</i>	111	Peoria
Kuhn, Henry Harrison	<i>ME</i>	73	Rock Island
Kuhn, Wilfred Henry	<i>CE</i>	41	Chicago
Kuhnen, Proctor George	<i>CE</i>		Dixon
Kuhns, John Christian	<i>EE</i>	57½	Argenta
Kupper, Walter Jacob	<i>Agr</i>		Peoria
Kurt, John Joseph	<i>ME</i>	87½	Champaign
Kurt, Leo Peter, Jr.	<i>ME (SS)</i>	29	Champaign
Kyle, George Lane	<i>EE</i>	44	Chicago
Lackey, Kate	<i>LA</i>		Lawrenceville
LaClair, Strawn	<i>Agr sp</i>		Medford, Ore.
Lafferty, George Gustavus	<i>SS</i>	23	Knoxville
Lafferty, John Sam	<i>AE</i>	55	Ashley
LaFrenz, Grace Etheridge	<i>LA</i>	28	Bushnell
Lakoff, Charles Benjamin	<i>Ch</i>		Chicago
Lamb, Edith Jane	<i>LA (SS)</i>	66	Champaign
Lambroff, Gregory Vesileff	<i>EE</i>		Madison
Lamkey, Ernest Michael Rudolph	<i>S (SS)</i>	110	Riverton
Lamkins, Loyde E	<i>Agr</i>		Champaign
Lanan, Guy	<i>Agr</i>		Kingston
Lancaster, Ruth Ellen	<i>LA</i>	35	Maywood
Landee, Anna Irene	<i>LA</i>	31	Moline
Landee, Marian Charlotte	<i>LA sp</i>	8	Moline
Landon, Herbert Updike	<i>Agr</i>	72	Jerseyville
Landry, Adelbert Joseph	<i>CE</i>		Rockford
Lane, Cora May	<i>LA (SS)</i>	91	Danville
Lane, Henry Harold	<i>BLA</i>		Harvey
Langan, Clarence Leo	<i>Agr sp</i>	28½	Kankakee
Lange, Lloyd H	<i>CE</i>		Rockford
Lanier, Russell D'Lyon	<i>RME (SS)</i>	57	Birmingham, Ala.
Lansche, Oral Albert	<i>EE</i>		Brighton
Lantz, Cyrus William	<i>S</i>	105½	Birmingham
Lantz, Etta Mable	<i>LA</i>	74	Carlock
Lanum, Harold Baird	<i>BLA</i>	82½	Urbana
Largent, Jess Charles	<i>AE</i>		Champaign
Larkin, Francis DuLude	<i>S (SS)</i>	105½	Chicago
Larkin, Ida Clementine	<i>LA</i>	106	Kansas City, Kans.
Larkin, William James, Jr.	<i>AE</i>	111	Chicago
Larsen, David Thorsten	<i>S</i>	25	Elgin
Larsen, Lester Reginald	<i>ME</i>	108	Chicago
Larson, Eva Lillian	<i>HSLA</i>	62	Chicago
Larson, Irving Nicholas	<i>A</i>	31	LaPorte, Ind.
Larson, Lambert Linus	<i>ChE</i>	64	Mazon
LaRue, Maurice John	<i>Agr sp</i>	9½	Chicago
LaSell, Florence Lenore	<i>Mus</i>		Champaign
Lathrop, Charlton Page	<i>Agr</i>		Chicago
Lattin, Robert Thomas	<i>EE</i>	120	Hamilton, Ontario
Latzer, Irma Ada	<i>HSS</i>	59	Highland
Lauterbach, Edward George	<i>Agr</i>	22	Bushnell
Lavadia, Pedro Celestino	<i>Agr sp</i>	31	Pagsanghan, P. I.

Lawless, Joseph Conrad	<i>Agr</i>	55	Carthage
Lawnin, Nelson	<i>ME</i>		Edwardsville
Lawrence, Ernest	<i>Agr</i>	66	Hudson
Lawrence, Lorena Lucille	<i>HSLA</i>		Clinton
Laws, Joel William	<i>Agr sp</i>		Donnellson
Lawton, Bradley Cleaver	<i>BLA</i>	23½	Cleveland, Ohio
Lay, Chung-Yuen	<i>CE sp</i>	21	Huleh, China
Layden, Theodore Edmond	<i>Agr</i>	108	Cheneyville
Leach, Margaret Fanny	<i>HSLA</i>	101	Chicago
Leander, Elmer Isidor	<i>CE</i>		Chicago
Leander, LeRoy Nathaniel	<i>EE</i>		Chicago
Leatherman, Marian, A.B. (Cornell Univ.) 1907	<i>Lb</i>		Pittsburg, Pa.
Leavens, Arthur Fowen	<i>AE</i>	35	Kansas City, Mo.
Leavitt, Herbert Douglas	<i>Agr</i>		Bloomfield, Ind.
Lecour, Louis Paul	<i>Agr sp</i>		Kankakee
Ledgerwood, Leroy William	<i>AE</i>		Springfield, Mo.
Lee, Carrie Alice	<i>Mus</i>	19	Champaign
Lee, Everett Samuel	<i>EE</i>	108	River Forest
Lee, Izora	<i>HSAgr</i>	67	Aledo
Lee, Thomas Wikoff	<i>Agr sp</i>		Kansas City, Mo.
Lee, William Hamilton	<i>L</i>	28	Urbana
Lee, Ying Nan	<i>S</i>	76	Shanghai, China
LeeToma, Ethel Kinkyan	<i>LA</i>		Honolulu, Hawaii
Leiblsie, Roy Walter	<i>A</i>		Des Moines, Ia.
Leichaeuring, Max Fredrich	<i>AE</i>	17	Chicago
Leighty, Wayne Snyder	<i>Agr</i>		Billet
Leiserwitz, Samuel Brody	<i>Md</i>	26	Herscher
LeKander, Roy Edward	<i>CE</i>		West Chicago
Lekberg, Carl Helge Samuel	<i>EE</i>	72	South Chicago
Lemmon, Edgar Guy	<i>BLA</i>		Roodhouse
Lemmon, Ross Barton	<i>BLA</i>		Roodhouse
Lemp, John Frederick	<i>ChE</i>		Alton
Lenhart, Norman Joseph	<i>BLA</i>		Mattoon
Lenz, Andrew Henry	<i>EE</i>		Quincy
Lenzing, Chester William	<i>ChE</i>		Chicago
Leonard, Frank Bonner, A.B., 1912	<i>SS</i>		Metropolis
Leonard, William Nathan	<i>Agr (SS)</i>	25	Anna
Leopold, Elmer Edward	<i>L</i>	35	Belleville
Leopold, Roland Eugene	<i>BLA</i>	15	Belleville
Lerliche, Willis	<i>MnE</i>	73	Highland
Leslie, Eugene Hendricks	<i>ChE</i>	107	Ottawa
Leverenz, Arthur Charles Gustav	<i>ME</i>	35	Elgin
Levin, Eli	<i>Md</i>	9	Indiana Harbor, Ind.
Levis, William Edward	<i>L</i>	87	Alton
Levis, Walter Rhodes	<i>S</i>	30	Alton
Lewin, William Frank	<i>Agr sp</i>		Comstock, Nebr.
Lewis, Clara Vesta	<i>HSLA</i>	61	Cairo
Lewis, John Edwin	<i>CE</i>	75	Wheaton
Lewis, Katharine, A.B., 1912	<i>Lb</i>		Chicago
Lewis, Louise Laura	<i>HSAgr (SS)</i>	93	Cairo
Lewis, Luther Mason	<i>L</i>		Chicago
Lewis, Llewellyn Roy	<i>SS</i>	6	Mexico City, Mex.
Lewis, Thomas Dickerson	<i>S</i>		Wheaton
Lewis, Thurlow Girard	<i>L (SS)</i>		Sesser
Liang, Hsun-Ying	<i>ME (SS)</i>	20	Foo-Chow, China
Liang, Tu Hung	<i>Agr</i>	30	Canton, China
Lichter, John Paul	<i>CE (SS)</i>	36	Chicago
Lidster, Homer Edward	<i>Agr sp</i>		Chicago
Liggett, David Carl	<i>Md (SS)</i>	115½	Camp Point
Liggett, Irene Lillian	<i>LA</i>		Camp Point
Liggett, Leslie Alvin	<i>CE</i>	73½	Peoria
Light, Curtis Roy	<i>CE</i>	103	Brook, Ind.
Light, Vera	<i>LA</i>	27	Chrisman
Lillie, Jacob Samuel	<i>SS</i>	11	W. LaFayette, Ind.
Linbarger, Silas Carl	<i>CerE</i>	33	Champaign

Lindberg, George Isadore	ME	35	Princeton, Mich.
Linder, Grace	SS	50	Urbana
Linder, Lewis S	S	65½	Charleston
Lindley, Bess Mae	LA	65	Urbana
Lindley, Ida Hubbard	LA	27	Urbana
Lindmark, Edward Emanuel	CerE		Sycamore
Lindquist, Fred Arthur	ME		Plano
Lindsay, Horace Willard	EE		Rockford
Lindsey, George Heath	EE	47	St. Louis, Mo.
Link, Earl John	Agr	49½	Forreston
Link, Hilah Jane	LA	30	Champaign
Linskey, Frances	SS	6	Streator
Linsley, Clyde Maurice	Agr	33½	Fairfield
Lippe, Raymond Wills	SS	52	Champaign
Liss, Oscar Lippman	CE (SS)	69	Loda, Russia
Little, Alfred Leonard	BLA	52	Chicago
Little, Charles Reeves	BLA		Urbana
Little, Ethel Esther	S	49	Champaign
Little, Janet Gertrude	SS	7	Kingsley, Iowa
Little, Mrs. Julia Bush	Mus	8	Champaign
Littler, Carrie	SS	6	Potomac
Livesay, Ruth Flag	LA		Nashville
Livesay, Wallace Bright	AE		Waynesboro, Va.
Lloyd, Thomas Harold	Agr	25	Girard
Locke, Clara Edith	HSS	96	Terre Haute, Ind.
Loeffler, Frank Xavier	CE	110	Chicago
Loehr, Theodore Edwin	LA	139	Carlinville
Loh, Pao Kan	Agr (SS)	115½	Soo Chow, China
Lohnes, Willard Henry	RME sp		Cherokee, Ia.
Lohr, Louis Warren	BLA	99	Pana
Long, John Oras	LA		Watseka
Long, Thomas Henry	Agr sp	1	Harmon
Longden, Grafton Johnson	Agr	40½	Greencastle, Ind.
Longueville, Joseph Charles	A	67½	Dubuque, Ia.
Loomis, Clayton Benjamin	Agr		Chicago
Loose, Isaac Arthur	Agr sp	12	Illioopolis
Lopez, Asuncion V	CE (SS)	84½	Durango, Mex.
Lotz, Harold Benjamin	AE		Madison, Ind.
Loutzenhiser, Sarah Eula	LA	103	Danville
Love, Clifford Sharon	Agr		Sidney
Loveless, William Raymond	CE	69	Altamont
Lowe, Ethelbert Coke	L		Robinson
Lower, Paul Elton	Agr	64	Chicago
Lowry, Kathryn Ellen	Mus sp		Fairland
Luckett, Coen L	S	67	Terre Haute, Ind.
Luckhaupt, Fannie May	SS	11½	Marshall
Ludvik, Benjamin Edward	LA		Chicago
Ludwig, Holly Jacob	Agr sp		Urbana
Ludwig, Lester John	LA		Ottawa
Luedke, Gustav Paul	S sp	63½	Chatham
Lumley, Harold McLean	Agr		Urbana
Lumley, Leslie Robert	Agr		Urbana
Lund, John Virtus	CE		Elgin
Lunde, George Richard	Agr		Chicago
Lundgren, Frederick Gunnard	ME	35½	Chicago
Lundin, Roy Simeon	Agr	37	Chicago
Lundquist, Theodor Hjalmar	S		Buffalo, N. Y.
Luney, Edward Ross	ME	110	DeKalb
Luney, Ray Timothy	L	62½	DeKalb
Lurie, Erwin Moses	CE	89	Chicago
Lutz, Robert Stookey	EE	32	Decatur
Lux, Thursa Edna	SS	4	Monticello
Lyman, Lewis Thornton	Agr sp		Puna, Hawaii
Lynn, John Robert	A		Greensburg, Ind.
Lyon, John Boyd	Cer		LaHarpe
Lyons, Anna Frances	SS	8	Pontiac

Lyons, Carrie Fay	HSLA		Urbana
Lyons, Hazel Sibyl	LA		Urbana
Lyons, Helen Margaret	SS	8	Pontiac
Lyons, John Daniel	L		Chicago
Lyons, Roy Jacob	Agr	71½	Urbana
McAdams, May Elizabeth	Agr sp		Chicago
McAfee, Leo Gay	BLA		Springfield
McAnally, Jesse Franklin	SS	8	Buffalo
McArdle, Montrose Pallen	A	6	St. Louis, Mo.
McBeath, Grace	Mus	61	Urbana
McBroom, Leland Albert	A	51	Grimes, Iowa
McCabe, Claude Lee	LA	69½	Willow Hill
McCanna, David Thomas	Agr	5	Minneapolis, Minn.
McCarthy, Frank William	CE		Washington, D. C.
McCaskill, Kenneth Alexander	Agr (SS)	45½	Taylorville
McCaughy, Louis Douglass	EE	98½	Macomb
McCauley, Charles Hartman	A	42	Chicago
McCauley, James	LA		Harvard
McClelland, George Leo	Agr	69½	Peoria
McClelland, Miles John	AE		Boise, Idaho
McClintock, Margaret Christine	HSAgr	107	Chicago
McCluggage, Harry Bruce	ChE	31	Peoria
McClure, Winifred Leo	HSS	12	Chrisman
McClurkin, Clifford Henry	L	16	Morning Sun, Ia.
McConnel, Isaac Marion	Agr	70	Reynolds
McCormack, Joseph Hume	ChE	12	LaSalle
McCormick, Elmer	ME	86½	Pontiac
McCoy, Alva Elisha	Agr		Altamont
McCoy, Henry James	Md	28	Amboy
McCoy, John Jay	Cer (SS)	53	Chicago Heights
McCracken, Howard Orr	Agr	63½	Paxton
McCracken, Wendell Kemp	BLA		Paxton
McCulloch, Harry Weber	SS	124½	Milford
McCullough, Helen E	HSLA		Urbana
McCumber, Charles William	AE	10½	Chicago
McCune, Joseph McCray	L		Kansas City, Mo.
McDavid, Joel Furnas	LA	78	Hillsboro
MacDonald, Alexander Paul, Jr.	Agr		Morris
McDonald, James Edward William	MnE	71	Chicago
MacDonald, Herbert William	A	102	Chicago
McDougle, May	HSAgr		Charleston
McDougle, Verne Russell	A		Charleston
McElhiney, Florence	LA sp		Kenney
McEvoy, Myrtle Loretta	HSLA	23	Peoria
McFall, Dumas Miller	LA		Mattoon
McFarland, Dan	Agr sp		McLean
McFarland, Ellis Dean	Agr	57	Camp Point
McGaughey, Guy Ennis	LA	31	Lawrenceville
McGee, Edna Amelia	LA (SS)	74½	St. Joseph
McGhee, Ora M	Agr sp	35	Norris City
McGinnis, Albert Henry	Agr		Mendota
McGorrisk, Daniel Hunt	AE	114	Des Moines, Ia.
McGrath, James	S	65½	Springfield
McGraw, Katherine Leslie	LA	62	Urbana
McGrew, Charles Babcock	A	110	Lewistown
MacHatton, Ralph Alexander	LA sp		Robinson
MacInnes, Frances Jean	S		Champaign
McIntosh, Harold Stanton	ME	106	Geneva
McIntyre, George Edward	AE	123	Monmouth
McIntyre, Mabel	LA (SS)	98	Newman
McKay, Dea David	L		Canton
McKee, Josephine Pearl	HSLA		Fairbury
McKee, Olivetta C	HSLA	67	Fairbury
McKeon, Joseph Moore	ME		Buffalo, N. Y.
McKeown, John Latimer	AE	36	Chicago
McKinney, Henry Theodore	LA (SS)	115½	Hudgens

McKinney, Myrtle	SS	2	Hudgens
McKnight, Joe Ben	Agr		Wiggins, Miss.
McKnight, Timothy Irl	L	1½	Oblong
McLaughlin, James William	ME	100	Paris
McLean, Martha	HSLA		Macomb
McLean, Nicholas	EE		Princeton
McLean, Sarah	SS	8	Geneva
McLeod, George Cecil	Agr sp		Leakesville, Miss.
McManus, James B	SS	17½	LaSalle
McMaster, William	L		Bellefourche, S. D.
McMillen, George Burr	BLA	36	Champaign
McMullan, Henry Evan	S (SS)	98½	Belleville, Mich.
McPherson, Earle Steele	ME	64½	Highland Park
McRobie, Douglas	Cer	14	Montclair, N. J.
McVay, Thomas Newkirk	CerE	102	Urbana
MacVean, Lillian Imogene	LA	66	Toronto, Canada
McVeigh, Henry Hancock	Agr		Springfield
McWethy, Daniel Valentine	BLA	67	Aurora
McWilliams, Marie Lindsey	Mus sp		Urbana
Macis, John Raphael	CE		New York City
Madden, Grace Ermine	LA		Champaign
Madden, Helen Louise	LA (SS)	35½	Champaign
Mader, August	AE	40	Farmer City
Madsen, Olav	AE		Litchfield, Minn.
Magee, Elon Charles	Agr	126½	Geneseo
Magruder, Denton, Adlai	LA		Potomac
Mahn, George Willis	AE		Urbana
Mahood, Harry Samuel	CE		Mt. Carroll
Malaise, Clayton Lee	EE	75	Serena
Maley, Robert Carleton	ME	34	Grays Lake
Maloit, Pauline Germaine	LA		Elmhurst
Manley, Charles Thomas	SS	6½	Butte, Mont.
Manley, Myra Frances	SS	2	Champaign
Manley, Pearl M	HS Agr sp (SS)	39	Champaign
Manley, Verna Adaline	LA		Champaign
Mann, Arthur Sidney	AE	70	Kankakee
Mann, Edith Melvina	LA	83	Kankakee
Mann, Harold Abraham	Agr sp		Mannville, Fla.
Mann, Harold Edward	Agr	97½	Rossville
Marblestone, Rose	LA		Bicknell, Ind.
Maris, Ward S	Agr		Tuscola
Markley, Leland Stanford	Agr	105½	Grand Rapids, Mich.
Markmann, Carl Bennett	REE		St. Louis, Mo.
Markwell, Olen Crow	Agr		Stonington
Marquis, Du Bois	Agr	118	Bloomington
Marquis, Leo Daniel	A	40	Milford
Marsh, Ethel Carrie	SS	6½	St. Joseph
Marsh, Nellie May	SS	6½	St. Joseph
Marshall, Frank Edward	EE	110½	Serena
Marshall, James Ward	EE	6	Chicago
Marshall, Ralph William	Agr (SS)	17	West Chicago
Marshall, Robert Haskell	S sp		Gamaliel, Ky.
Martin, Claude J	Agr	22	Mason City
Martin, Clive C	L	25	Latham
Martin, Earl Rav	Agr		Prophetstown
Martin, Esther Evelyn	SS	8	Bridgeport
Martin, Fay Waldo	BLA		Mt. Carmel
Martin, Joe Neely	LA		Sullivan
Martin, Robert Sackett	Agr		Chicago
Marx, Frederick August Kuhs	MSE	35½	St. Louis, Mo.
Masel, Max	ME	26½	Alton
Mason, Arthur Helgeson	BLA		Urbana
Mason, Ross Seguire	ME	37	Buda
Masters, John Howard	ME	120	Frankfort, Ind.
Mateer, Howard Wilson	EE		Rutland
Mather, Cornelia Grace	HSS	98	Plainfield

Mathers, Aaron	BLA	60	Laura
Mathers, Andrew Jackson	Agr	30	Laura
Mathers, Leslie Eugene	Agr	114½	Momence
Mathers, Manley Bonham	Agr (SS)	102	Momence
Mathes, Georgia	SS	6	Charleston
Mathews, Howard	EE	111	Yates City
Mathews, William B	S (SS)	65½	Yates City
Matteson, Glenn Harlow	Agr	32½	Fairfield
Mattingly, Leo Joseph	AE		Champaign
Mattingly, William Brasher	Agr	64½	Cairo
Mattis, Ida Levering	Mus sp	39	Champaign
Mattis, Mary Katherine, A.B. (Smith Coll) 1911	Mus		Champaign
Mattison, John Dwight	CE	37	Oregon
Mattoon, Edwin Whitaker	Md	33	Champaign
Maury, Charles Fontaine	A	130	Houston, Tex.
Maury, John Alvan	EE	108	Rossville
Maury, Thomas Edward	ME	75	Rossville
Mavity, Maurine	HSLA		Valparaiso, Ind.
Mavor, Hugh Nelson	AE		LaGrange
Maxwell, Harold Dillon	LA		Urbana
May, Clifford Blaine	Agr		Kirkland
May, Eric Oscar	SS	8	Newton
Mayes, George William	EE	108	Champaign
Mealiff, Arthur Edward	Agr		Chicago
Measer, James Henry	EE	64	Fairmount
Meek, Charles Thaddeus	Agr	103	Carrollton
Meek, Wilbur	LA		Carrollton
Mehl, Wallace Willis	L	58	Goshen, Ind.
Meisenhelder, Benjamin	EE		Palestine
Melcher, Woodbury Ranlet	Agr	26	Hinsdale
Melin, George Edgar	Agr		Moline
Meltz, Nathan	Agr sp		Ekaterinoslaw, Russia
Meneley, Olive Myrtle	Mus		Champaign
Mengel, George Henry	ChE (SS)	87½	Moline
Menke, Arnold Edward	S	26	Evansville, Ind.
Menke, Harry George	RCE	75	Quincy
Mercer, Walter Wittchell	L	57	Vermont
Mercey, Raymond John	Md		St. David
Meredith, Ina Valeria	S	51	Perry
Merrill, Thompson Arlene	BLA	99	Beardstown
Mershimer, James Dwight	Md (SS)	27	Chicago
Meserve, Theodore Decatur	S	95	Robinson
Metz, Carl Altgeld	CE	36	Tolono
Metzger, LeRoy Paul	BLA		Cairo
Metzler, Arthur Maurice	BLA	31	Champaign
Metzler, Curtis Vernon	ME	30	Strasburg
Meyer, Carl Theodore	A		Springfield
Meyer, George, Jr.	ME	90	Chicago
Meyer, George William	A sp		Davenport, Ia.
Meyer, Orval Conrad	ME		Vincennes, Ind.
Meyers, Paul Lillard	Agr	21	Indianapolis, Ind.
Michael, Ethel Otille Sophia	Mus		Champaign
Michael, Wilbur Harold	ME	81	Chicago
Middleton, Walter Stanley	ME (SS)	107	Assumption
Miers, Roy Hamilton	Agr sp	52	Burney, Ind.
Miessler, Erich Carl	S		Crete
Miles, Eunice	HSLA	23	Garden City, Kan.
Miles, Joseph Porter	Agr	60½	Lewistown
Miles, Luther Fiske	Agr (SS)	5	Urbana
Miles, May	HSAgr	6	Garden City, Kan.
Miles, Ruth Columbia	LA		Urbana
Mill, Robert Charles	SS	7½	Decatur
Millar, Russell Ward	Ch		Mattoon
Miller, Arthur Clair	SS		Peoria
Miller, Benjamin Harry	CE	12	Maywood

Miller, Chester B, A.B., 1907	SS		Champaign
Miller, Clayton Allen	EE	83	Tiffin, Ohio
Miller, Clyde Albert	EE	25½	Sunbury, Pa.
Miller, Clyde Lindley	ME		Urbana
Miller, Daniel Edwin	ME	7	Quincy
Miller, Elliott Strong	BLA		Oak Park
Miller, Erwin Franklin	A	16	Onaga, Kan.
Miller, Eunice Blanche	Mus sp		Winamac, Ind.
Miller, Fred Raney	LA		Gilman
Miller, Jessie Fay	LA	103	Gilman
Miller, John Harold	EE	36	Oak Park
Miller, Joseph Harrison	CE	36	Red Oak
Miner, Lew Stevenson	Agr sp	30	Alexis
Miller, Mabel Lucile, A.B., 1912	SS		Urbana
Miller, Marcus Gilbert	A	76	Girard, Ohio
Miller, Olive Fiedele	LA	66	Atlanta
Miller, Ora Lucile	HSLA	52	Atlanta
Miller, Thomas Winfrey	EE	52	Springfield, Mo.
Miller, Welby West	BLA	98	Urbana
Miller, William Pitt, B.S., 1901	Agr		Bloomington
Millizen, Edna Varner	Mus	25	Champaign
Mills, Charles R	SS	13½	Buckley
Mills, Fred Leon	LA		Oak Park
Mills, John Turner	Agr		McNabb
Milne, Agnes Mabel	HSS	26	Lockport
Milne, Minnie Isabel	HSS (SS)	52	Lockport
Minard, Barbara Winfred	LA	30	Blue Island
Minchin, Sidney Henry	A	40½	Chicago
Miner, Harry Eugene	BLA		Watseka
Miner, Henry	Agr	25½	Waverly
Miner, Lester Ward	Agr	60	Shelbyville
Miner, William	SS	50½	Mt. Vernon
Minnis, Lemuel Ernest	Agr		Chicago
Minor, Loyal Leonard	Agr	130	Aledo
Merick, Harry Rugee	BLA	101	Chicago
Misner, Francis de Sales	EE	168½	Peoria
Mitchell, Elsie Louise	HSAgr	15	Havana
Mitchell, Florence Ferne	SS	32½	Urbana
Mitchell, Grace	LA		Urbana
Mitchell, Grover Ira	ME	79	Cornell
Mitchell, Helen	LA	65	Urbana
Mitchell, Janet	HSLA	69½	Chicago
Mitchell, Joe Orlando	A (SS)	109½	Champaign
Mitchell, Lionel Earl	Md	31	Chicago
Mitchell, Marguerite, A.B. (Wilmington Coll.) 1910	Lb	33	Wilmington, O.
Mitchell, Ruffin Edward	MnE	75	Carbondale
Mitchell, William Leland	Md		E. St. Louis
Mix, Martin Ira	ME	126	Chicago
Mize, Robert Charles	L	86	Santa Ana, Calif.
Mizoguchi, Gundayu	EE	69	Saga, Japan
Moh, Hsiang-Yueh	Agr (SS)	110½	Shanghai, China
Mohlman, Harry	S		Urbana
Mohr, Alba Agnes	LA (SS)	25	Beardstown
Moir, Robert Burrill	CE	82	Chicago
Molt, Margaret Ellen	LA	65	Clinton, Ia.
Monteiro, Joao Plinio de Barros	EE (SS)	73	So. Paulo, Brazil
Moon, Gladys	LA		LeRoy
Mooney, Raymond	EE		Chicago
Moore, Harry Clay	L	67	Mattoon
Moore, Herbert Jackson	Agr	41½	Chicago
Moore, Marlin Clarkson	Agr	9	Chicago
Moore, Mary Rebecca, A.B., 1911	Mus	132	Tolono
Moore, Richard Jacob	Agr sp	23	Griggsville
Moore, Ruby Frances	LA	72½	Cleveland, Miss.
Moore, Sidney Samuel	SS	8	Galva

Moore, Stanley Jewell	SS	8	Cincinnati, O.
Moore, William Abner	LA		Urbana
Morehead, Herbert Leslie	A		Cedar Rapids, Ia.
Moreland, Oscar Everette	Agr		Indianola
Morey, Laura Myla	Mus sp		Vandalia
Morgan, Charles Leonard	A	118½	Urbana
Morgan, Chester Arthur	MnE	34	Virden
Morgan, Edith Marian, A.B. (Univ. Minnesota) 1909	Lb		St. Cloud, Minn.
Morgan, Grace Busey	LA	66	Urbana
Morgan, Harry Edward	L	56	Belleville
Morgan, John William	SS	104 2-3	Clayton
Morgan, Ralph Waldo	ChE		Macomb
Morgan, Rudolph Bennett	SS	7½	Alpha
Morgan, Thomas Sherman	LA		E. St. Louis
Morin, Oswell	S		Danville
Morray, Kenneth Ralph	Agr sp		Vienna
Morrell, Ralph Leonard	CE	56	Chicago
Morris, Alice Elvira	S (SS)	110½	Viola
Morris, Arthur Marvin	L	58	Oskaloosa, Ia.
Morris, Harold Bayley	Agr sp		Tonica
Morris, Leland Albert	L	23	Cartersville, S. C.
Morris, Roy Edward	EE	36	Dwight
Morris, Vernon Leslie	AE	36	Congress Park
Morrison, Donald Kenneth	S	54	Champaign
Morrison, Helen Sinclair	HSAgr	37½	Joliet
Morrison, William Raymond	L	54	Waterloo
Morrissey, Edward Henry	LA (SS)	54½	Champaign
Morrissey, John Johnson	Agr sp		Princeville
Morrissey, Matthew Joseph, Jr.	MnE	54	Chicago
Morrow, Arnold Vivian	ME		White Hall
Morse, Jessie	LA	65	Urbana
Morton, Henry Augustine	Agr		Canton
Moser, Olga Fern	Mus	110	Sigel
Moses, Robert Louis	Agr		Chicago
Mosher, James Barnes	Agr		Prophetstown
Mosier, Leota Irene	HSLA		Urbana
Moss, Gladys Ione	HSLA	30	Chicago
Mostollar, Harvey Gove	Agr	25	Bloomington
Mottern, Halbert Nicholas	A	33	Russellville, Ind.
Mottern, Layton Robert	BLA		Russellville, Ind.
Mottier, Julia Louise	HSLA		Gibson City
Mouch, William George	CerE	23	Milford
Moulton, Henry Harper	S	24½	Glen Ellyn
Moulton, Wesley Hillman	S	12	Glen Ellyn
Mounts, Maryon Evelyn	LA	103	Carlinville
Mounts, Will Walter	ME	18	Carlinville
Mourning, Paul Wetzel	LA sp	22	Rushville
Moutray, Mary Elizabeth	Mus	35	Urbana
Moutray, Madeleine	LA	31	Urbana
Muckelroy, Renzo	SS	32½	Carbondale
Mueller, Harrie Stevens	Agr	72½	Wichita, Kan.
Mueller, Harry Louis	Ch		Highland
Mueller, Henry Fred	BLA		St. Louis, Mo.
Mueller, Herbert Zoller	EE		Quincy
Mulac, Louis Edward	ME		Chicago
Mulfinger, Carl Wesley	L	81	Chicago
Mullen, Clarence Clement	EE		Savanna
Mullens, Edward Richard	AE		Champaign
Mulvaney, Charles Stewart	CE	81½	Chicago
Munroe, Courtland Leroy	ChE	150	River Forest
Murdock, James Oliver	LA		San Antonio, Tex.
Murdock, Paul Willard	A	35	San Antonio, Tex.
Murdock, Elizabeth Adams	Mus	21	Champaign
Murphy, Everett Franklin	Agr		Marshall
Murphy, Howard Dawson	Agr		Chicago



Murphy, Joseph Ivan	S	64	Urbana, Ohio
Murphy, Kendall Tuttle	CE	105½	Sterling
Murphy, Leo Thomas	Agr		Sullivan
Murphy, Mary Agnes	Mus	74	Sullivan
Murr, Milton	CE	75	Chicago
Murray, Forrest Hamilton	S	74½	Mazon
Murray, Oscar James	BLA		Chicago
Myers, Arthur Leslie	ME (SS)	108	Harvey
Myers, Charles Everett	S (SS)	105½	Huntington, W. Va.
Myers, Jacob Wimmam, A.B., 1911	L	43	Harrisburg
Myers, Lena Josephine	LA	115	Urbana
Myers, Nina Claire	LA	32	Urbana
Myers, Odessa Madge	LA	71	Mansfield
Myers, Rachel Flossie	S	37½	Huntington, W. Va.
Myers, Waldo Ray	BLA		Mansfield
Nagel, Marcella Elizabeth Adalaide	HSAgr	64	Terre Haute, Ind.
Nakada, Kyoichi	EE sp		Okayamaken, Japan
Nakayama, Moki	EE		Kochi, Japan
Nance, Wiley Finney	EE		Urbana
Naprstek, Frank Joseph	AE	101	Chicago
Nathan, Myer Oscar	A	138	Boone, Iowa
Nay, Ernest Omar	Md		Marshall
Nebel, Clarence Arthur	Agr	34½	Urbana
Nebel, Dora Myrtle	LA (SS)	90	Urbana
Nebel, Merle Louis	MnE	111	Urbana
Needham, Minnie Lucile	HSLA	30	Urbana
Needler, Helen Montgomery	HSAgr	64	Chicago
Neely, Bertha	LA	26	Marion
Neely, John Lynde	Agr	119½	Seward
Neill, Alma Jessie	S	88	Chillicothe
Nelson, Adolph Lincoln	ME	12	Galesburg
Nelson, Anna M	SS		Knoxville
Nelson, Carl Ferdinand	Md		Rockford
Nelson, Carl Ray	ME (SS)	71	Gothenburg, Sweden
Nelson, Clarence Quincy	AE		Albia, Iowa
Nelson, Daisy	HSS		Canton
Nelson, Elmer George	Md		Menominee, Mich.
Nelson, Leon Wilfred	Agr	9½	Knoxville
Nelson, Milton N	LA	33	Chicago
Nelson, Myrtle Pauline	HSLA		Moline
Nelson, Peter Swan	ME	91	DeKalb
Nelson, Ralph Augustus	ChE	49	Chicago
Nelson, Roslyn Bertha	LA	23	Urbana
Nelson, Walter Stephen	EE	33	Chicago
Nesbitt, Herman Bayless	Agr	28	New Richmond, Ind.
Neslage, Oliver John	ME		St. Louis, Mo.
Netcott, Roland Earl	AE		Independence, Ia.
Neuhalfen, Mathias	AE	58½	Grand Island, Nebr.
Neuling, Harry John	LA (SS)	29	Ellis Grove
Neville, Florence Edith	LA	29	Kewanee
Nevins, Arthur Seymour	LA (SS)	116	Champaign
New, Tsunyoong	Agr (SS)	52	Ningpo, China
Newburn, Naomi Olive	HSLA	68	Urbana
Newcomb, John Elijah	SS	1½	Gibson City
Newell, George Arthur, Jr.	BLA	57	Medina, N. Y.
Newell, Moses Elmer	SS	9	Hersman
Newenham, Raymond	L		Girard
Newkirk, Madge Wilmot	HSLA		Chrisman
Newman, Fanny	LA	93	Indianapolis, Ind.
Newman, Fred Allen	Agr sp		Wayne City
Newman, Margaret Jane	SS		Charleston
Newton, Leonard Victor	MnE	111	Chicago
Nicholls, Cecil Richard	Agr sp		Stark
Nichols, Floris Wilson	BLA		Wenona
Nichols, Herbert Sigourney	Agr sp	52½	Dixon
Nichols, James Lawrence	BLA	100	Naperville

Nichols, Ralph Uline	AE	112	Elgin
Nichols, Walter Lester	CE	36	St. Louis, Mo.
Nickelsen, John Minert	ME	74½	Mediapolis, Ia.
Nickerson, Avon Joshua	BLA	30	Champaign
Nicol, Charles Wheeler	A		W. Lafayette, Ind.
Nilsen, Peter Jacob	EE	26	Arindal, Norway
Nip, Fugar	ME		Chicago
Niver, Margaret	SS	60	Muscatine, Ia.
Niver, Roe	Agr	37	N. Fairfield, O.
Nixon, M L	Agr		Newport, Ind.
Nixon, Robert Henry, Jr.	Agr		Newport, Ind.
Nobis, Carl Joseph	Agr sp		Amelia, O.
Noble, Joseph Morgan	BLA	39	Wichita, Kans.
Noe, George	Agr sp		Sharon, Wis.
Noel, Claude Forrester	LA	5	Lake Bluff
Nolan, Albert Joseph	LA		Harvard
Nolte, John Elbert	BLA	34	Pekin
Noon, James Arthur	S (SS)	91½	Everett, Mass.
Noon, John Eliot	LA	73	Everett, Mass.
Noonan, Will Joseph	ME	17	Decatur
Norbury, Frank Garm, A.B. (Albion Coll.) 1912	SS	8	Springfield
Nordheim, Ethel Marie	LA		Anaheim, Calif.
Nordstedt, Einar August	EE	33	Joliet
Norlin, Fred Christian, Jr.	CE	6	Chicago
Norris, Wesley Kayler	CE	37	Chicago
North, Clyde James	Agr		Winchester
North, Page Lane	EE		Mattoon
Noth, Edwin Francis	A	82	Davenport, Ia.
Nowlen, Gladys Louise	HSS		Morrison
Nowlen, Proctor Albert	Agr	56½	Morrison
Noxon, Elmer Warner	ME		St. Louis, Mo.
Nugent, Walter Allyn	CE		Brocton
Nutt, George Sinclair	Ch	97	Kankakee
Nye, Linn Jones	Agr	20	Harristown
Oaks, Catherine Susan, A.B. (William Smith Coll.) 1912, B.L.S., 1912	Mus		Geneva, N. Y.
Oaks, Margaret Ray	HSS		Kirkwood
Oathout, Claude Leslie	Agr	113	Cissna Park
O'Brien, Raymond John	S	31	Ivesdale
O'Brien, Walter Lawrence	SS	8	Maple Park
O'Connor, Charles Andrew	L	91	DeKalb
Odell, Arthur Allen	AE (SS)	32	Holton, Mich.
O'Donnell, Hugh Francis	Agr	20½	Chicago
O'Donnell, Louise Lauretta	HS Agr		Galesburg
O'Donnell, Thomas Edward	A	152	Olney
Oehmke, Martin Frederick	L	56	Gifford
Ogden, Philip Langworthy	EE (SS)	110	Tiskilwa
Ogg, Robert Rennie	ME		Buffalo, N. Y.
Ogle, Arthur Hook	BLA (SS)	110	Belleville
Ogle, Charles Robert	ME	118	Belleville
Olds, Grover Edwin	Agr sp	10	Chicago
Olesen, Marie Georgine	LA	10	Chicago
Olin, Irene Balfour	LA	37	Evanston
Olsen, Anna Margaret	SS	25	Chicago
Olseng, Harry Christian	Agr	35	Chicago
Olson, Agnes Mildred	HSLA	57	Galesburg
Olson, Robert Harold	AE	32	Chicago
Olsson, Thomas Carl	Agr sp		Chicago
O'Meara, James Joseph	CE	6	Chicago
O'Neill, William George	AE		Faribault, Minn.
Orcutt, Arthur Henry	Agr	92½	Arcola
Ordonez, Benito Rene, Jr.	ME (SS)	106½	Saltillo, Mex.
Orland, Frank Addison	EE		Murphysboro
Ormsby, Lelia Mae	LA	56	Greenup

Orr, Clarence	LA		Auburn
Orr, Harold Vaughn	EE	73	Covington, Ky.
Orr, Mary Elizabeth	LA	67	Pekin
Ort, Emma F	HSS		Wahoo, Nebr.
Osborne, Pauline Theodora	LA	48	Champaign
Osborne, Reuel	LA		Wilmington
Osmena, Mariano y Uriarte	CE	105	Cebu, P. I.
Oswalt, Alonzo Benjamin	BLA	15	Anderson, Ind.
Ott, David Lee	ME		Prophetstown
Ottinger, Tracy Rollin	LA		Delta, Ohio
Ottman, Harley Paris	Agr	88½	Chicago
Otwell, Ralph B	Agr	47½	Carlinville
Ou, Hua Ching,			
A.B., 1906, B.S., 1911, M.S., 1912	SS		Canton, China
Ousley, Harold Paul	BLA	62	Paris
Overmeier, Emmons	ME	110	Mt. Auburn
Owen, Charles Norton	ME		Chicago
Owen, Harry Lea	AE		Plano
Owens, Cassius Marcellus	LA	46	Louisville, Ky.
Owens, Raymond Williams	EE	74	Morris
Oyler, James Loyd	ME		Taylorville
Pack, Margaret	LA	104	River Forest
Pagin, John Beitner	ME	21	LaGrange
Paine, Olive Allen	S	68	N. Woodstock, Conn.
Painkinsky, David	Ch		Salem
Palmer, Eckels	Agr	71	Princeton
Palmer, Gerald Lewis	Ch		Chicago
Palmer, James Asbury, A.B., A.M.			
(Shurtleff Coll.) 1897, 1901	SS		Clinton, Ky.
Palmer, Julius Clark	EE	71	Augusta
Palmer, William King	Agr	110½	Berwyn
Panhoe, Henry Aki	CE	50	Kamuela, Hawaii
Panhorst, Frederick William	CE	36	Urbana
Pankow, Charles John	A	110	Elgin
Pape, Leroy Frendenberg	LA (SS)	49	Chicago
Pape, William Paul	Agr sp		Kirkwood
Parent, Eugene Joseph	LA	16	Menominee, Mich.
Parish, William Love	AE		Greenfield
Park, George William	S		Murphysboro
Park, John Wallace	A	76	Chicago
Parker, Cora, A.B. (Kansas State			
Norm. Sch.) 1912	Lb		Emporia, Kans.
Parker, Helen Lucie	LA	139	Champaign
Parker, Horatio Newton	SS	5	Champaign
Parker, Lannis Alvin	S	32	Kissimmee, Fla.
Parker, Raymond Webb	EE	36	Champaign
Parker, Warren Kender	Agr	34½	Arlington Heights
Parkhurst, Clyde Emery	ME		Waterloo, Ia.
Parkins, Earle Henderson	Agr	63	Chicago
Parkins, George Raymond	Agr		Chicago
Parkinson, Harry Glenn	Agr	114½	Dunn Station, Pa.
Parkinson, Kenneth Warren	Agr		Maxwell
Parks, Edwin George	Agr		Astoria
Parks, Estelle	HSLA sp		Astoria
Parks, Ralph Milton	Mus	51	Urbana
Parks, Wilma Gay	LA	30	Cooperstown
Parr, Harold Lucien	S		Urbana
Parsons, Robert Percival	Md (SS)	37	Chicago
Partridge, Mazie Edna	SS	5	Chicago
Partridge, Newton Lyman	Agr	95½	Chicago
Paschal, Paul Milton	BLA		St. Charles
Pasewalk, Lloyd Herman	CE	101	Evanston
Patten, Norman Bond, Jr.	AE	46	Minneapolis, Minn.
Patterson, Charles Roy	L		Sullivan
Patterson, Joseph Julian	A		Danville
Patton, Charles Arthur	Agr sp		St. Jacob

Patton, Elsie	LA	120	Urbana
Pauli, Adolph Frederick	LA		Peoria
Paulsen, George Frederick	BLA		Marinette, Wis.
Payne, Richard Fuller	S	25	Omaha, Nebr.
Payne, Veda Louise	S	90	Chicago
Peadro, Earl D	CE	102	Sullivan
Pearson, Harriet Angeline, A.B. (Nebraska Wesleyan Univ.) 1907	Lb		Adams, Nebr.
Pearson, Paul Leo	Agr		N. Crystal Lake
Pearson, William Henry	BLA	103	Lena
Peck, Joseph Henry	Agr sp	28½	Ottawa
Peck, Roy Lee	EE		Oak Park
Peel, Elizabeth Clappett	LA sp		Springfield
Peeples, William McCord	Ch	68	Shawneetown
Peirce, Earl Carlton	ME	59	Chicago
Pell, Flossie Marie	LA		Urbana
Pengilly, Henry Eugene	ME	81	Chicago
Penn, John George	EE	108	Morris
Pennebaker, Charles Thomas	ME	38	Columbus, Ky.
Penny, Mildred Haynes	Mus		Chicago
Percival, Stella Rebecca	Mus		Champaign
Peret, Cecil Hubert	BLA	100	Seneca, Kans.
Perkins, Ethel Comfort	SS	9	Rensselaer, Ind.
Perkins, Paul Kenneth	Agr sp	33	Paris
Perring, Floyd John	Md	26	Champaign
Perrott, Richard H	SS		Arthur
Perry, George Sanford	Agr	9½	Chicago
Perry, Judson Maurice	Agr sp		Lindenwood
Perry, Margaret Campbell	HSS	20	Urbana
Perry, Ralph Grover	MnE	35	Urbana
Pervier, Carrie May	HSLA	80	Sheffield
Petersen, Herbert Christian,	CE	107	Park Ridge
Peterson, Harold	CE	106	Chicago
Peterson, Hilding Cunard Regnault	ME	85	Chicago
Peterson, Lola Maude	LA	102	Grand Forks, N. D.
Peterson, Ralph Gerald	CE	117	Chicago
Peterson, William Chandler	A		N. Crystal Lake
Petroff, Racho Poppove	EE		Musina, Bulgaria
Peyraud, Albert Paul	A	32	Chicago
Pfeffer, Harold Sylvester	A	101½	Lebanon
Pfeiffer, Josef Salisbury	BLA		Peoria
Pfrangle, Charles Perry	Ch	24	Aurora
Phelps, John Carne	ME	75	Oak Park
Philbrook, Alma Faye	HSS	25	Rock Island
Phillips, Jay Hamilton	Md	52	Chicago
Phillips, Paul Blair	S		Metropolis
Phoenix, Maida Jane	HSLA		White Bear, Minn.
Pierson, Walter Raymond	LA		Princeton
Pike, George Hyde	BLA	31	Silvis
Pihlgard, Eric Frederick	A	3½	Chicago
Pinault, Louis Clovis	A	58½	St. Joseph, Minn.
Ping, Clarence Edgar	Agr sp		Auburn
Pinkley, James Pierpont	AE		Gibson City
Pinkney, Fred Theodore	ChE	38	Chicago
Piper, Harry Bruce	Agr (SS)	90½	Sumner
Piper, William Ambrose	CerE	35	Sycamore
Pitsenbarger, Ethel Gertrude	LA		Champaign
Pitts, John Joseph, Jr.	LA	69	Bloomington
Plack, Theodore	CE	73	Urbana
Planck, Catherine Melvina	HSAGr	66	Chicago
Platofsky, Edward Charles	Ch	½	Chicago
Platt, Casper	LA	71	Danville
Pletcher, Delma Coe	HSLA		Rochester, Ind.
Pletcher, Lyle Jay	S	99½	Rochester, Ind.
Pletcher, Opha Belle	Lb	153½	Rochester, Ind.
Plumb, John Curtis	Agr	2	Chicago

Pogue, Harold Austin	BLA		Sullivan
Pogue, Paul Wright	BLA	79	Findley
Pogue, Stanley Landon	L	28	Sullivan
Polhemus, Joseph Burton	Agr	51½	Peoria
Polk, Wesley Williams	ME		LaGrange
Pollard, Leila Jean	HSAgr (SS)	61	St. Charles
Pollard, Lottie Emily	Mus	6	Chicago
Pollock, Charles William	EE	131	Seaton
Pollock, Harry Robb	Agr (SS)	100	Champaign
Pollock, James, Jr.	Agr	74½	Cambridge
Ponder, Wilbur Homer	BLA	116	Urbana
Pool, Ernest Howard	LA	35	Ottawa
Pope, Grace Castello	LA	33	Centralia
Pope, Lawrence Arthur	EE	68	Moline
Porter, Agnes Nellie	LA	118	Olney
Porter, Charley Lyman	Agr	123½	Mackinaw
Porter, Flora May	Agr sp		Urbana
Porter, Harry Gates	Agr		Garden Prairie
Porter, Webster K	ChE		Belvidere
Porterfield, Willard Blaine	BLA	90	Fairmount
Portuondo y Miyares, Antonio	Agr (SS)	85	Santiago, Cuba
Postel, Frederick William	BLA	41	Mascoutah
Poston, Floyd Emerson	S	63	Attica, Ind.
Potter, Emery Vern	EE	35	Champaign
Powell, Bernice	LA	54½	Des Moines, Ia.
Powell, Hazel Florence	SS	9½	Muskogee, Okla.
Powell, Stanley Noyce	CE	29	Bowen
Power, Paul Waring	ME		Petersburg
Powers, Fred Richmond	Agr	59½	Tiskilwa
Powers, J Orin	SS	102	Champaign
Powers, Leroy Tallman	Agr	67½	Sterling
Prahman, Charles Edward, Jr.	S	32	Oak Park
Prahman, Hazel	LA		Oak Park
Prasil, Anton	ChE	71	Berwyn
Presson, Harry Bristol	EE		Champaign
Presson, Lola Iris	HSS		Champaign
Preston, Alvin Fred	Agr		Montfort, Wis.
Preus, Paul Rudolph Arctander	CE	72	LaCrosse, Wis.
Price, Charles Bradlaw	Agr sp	32	Vienna
Price, Earl Franklin	BLA	33	N. Liberty, Ind.
Price, Harry Brusha	SS	93½	Fulton
Price, John McCrea	Cer	13	Brazil, Ind.
Prickett, Alva LeRoy	BLA	116	Litchfield
Primm, James Kelly	A	15	Champaign
Primm, Philip Timon	A	15	Champaign
Prince, Ford Smoot	S	113½	Conover, O.
Prince, William Jasper	Ch		Coin, Iowa
Prindiville, Francis Joseph	CE	135	Chicago
Prindle, Merwin Logsdon	S	94	Chicago
Pritchard, Paul Herbert	Agr	24	Belvidere
Pritzlaff, Charles Philip John	CE (SS)	68	Chicago
Proesel, William John	Agr sp	25½	Champaign
Prosser, Clara Louise	Mus sp		Chicago
Prout, Fred Joseph	RME	111	Topeka, Kans.
Prouty, Edwin Chester	CE	81	Chicago
Pruett, Eugene Francis	Agr		Kinmundy
Pruitt, Joe Lida	Mus	23	Urbana
Prussing, Arthur William	ChE		Chicago
Pudney, William Kent	Md	50½	Montclair, N. J.
Pugh, Ada Roberta	SS	82½	Champaign
Pung, William Sing-Chong	RCE (SS)	69	Honolulu, Hawaii
Purdy, Raymond Harry	A	33	Vincennes, Ind.
Purl, Charles Gilbert	Agr sp		Carrollton
Pursley, Emma Stine	LA	33	Kansas City, Mo.
Pursley, Helen Nettie	HSAgr	32	Kansas City, Mo.
Pyron, John Elder	ChE		St. Louis, Mo.
Questel, Benjamin Harrison	Agr		Carmi

Quick, George Edward	AE	75	Tiskilwa
Quick, Harry	ME		Tiskilwa
Quinn, Bernice Mae	LA	89	LaFayette
Raab, Anita Emma	LA	27	Belleville
Rackliffe, Thomas Thayer	S	17½	St. Joseph, Mo.
Radmore, Eleda Blake	Mus sp	14	Chicago
Rafferty, Clive Kleckner	Agr	26½	Carrollton
Rahn, Robert Charles	S		Chicago
Raibourn, Claude	LA		Waterloo
Raithel, Arthur Christopher	EE	6	Chicago
Rall, Eugene Robert Paul	CE	39	Chicago
Ralston, Stuart Albert	EE	120	Caledonia
Ramey, Frank Willard	A (SS)	3	Champaign
Ramey, Robert Henry	Agr	53½	Champaign
Ramsey, Carrie Eva	SS	24½	Danville
Ramsey, Leonidas Willing	Agr	58½	Hazlehurst, Miss.
Ramsey, Robert Willing	LA		Hazlehurst, Miss.
Ramseyer, Ben	Agr		Urbana
Rand, Charles Clafin	Cer	105	Lombard
Randall, Thomas David	ME	41	Chicago
Randolph, Hallie Burnside	Agr	60½	Covington, Ind.
Randolph, Oscar Alan, B.S. (Missouri School of Mines) 1911	SS		Urbana
Randolph, Otto Coffeen Fitz	CE	110	Chicago
Rang, Carl King	LA	68	Rockford
Rankin, Hugh Walker	ME (SS)	5	Cincinnati, Ohio
Ranson, Ethel Alice	LA	100	Havana
Rapp, Edwin Wallace	Md		Aurora
Rapp, John Holly	LA (SS)	31	Fairfield
Rapp, Peter George	SS	34	Fairfield
Rappaport, Benjamin Julius	AE	86	Chicago
Rapplewey, Willard Cole	Md	18	Menominee, Mich.
Ratcliff, Frank Damon	ME	57	Olney
Ratcliff, Glenn	SS	71	Greenup
Rathbun, Acors Earl	S	135	Glen Ellyn
Rathfon, William Owen	CerE	35	Chicago
Rauch, Paul Vincent	A	64	Wichita, Kan.
Raut, Alfred	Agr (SS)	43	Sedalia, Mo.
Ray, Bankin Chandre	EE		Bengal, India
Ray, Bryne Lucas	S	109½	Mason City, Ia.
Rayburn, Allan Barnes	Agr	32	Bloomington
Rayhill, Charles Thomas	LA		Belleville
Raymond, Reva Jane	HSAgr	31	Evansville, Ind.
Reace, William Thomas	EE	37	Marseilles
Read, Martha McClelland	SS	2	Baton Rouge, La.
Reader, Emma Grace	HSAgr	18	Centralia
Reagan, Maurice	EE		Canton
Real, John Jeremiah	BLA		Sterling
Reber, Edwin Perry	ME	37	Rockford
Reckitt, Charles Ernest	LA		Evanston
Rector, Theodore J	Agr sp	50½	Smithfield
Redborg, Carl Eric	BLA	87	Batavia
Reddersen, Edward Ernest	RCE	124	Chicago
Redhed, Alice	LA	102½	Tolono
Reed, Chester Otis, B.S., 1911	SS		Rochester, N. Y.
Reed, Clara Mabel	LA	29	Champaign
Reed, Erwin Ambrose	CE	117	Chicago
Reed, Gratia Jewett	HSLA	36	Warsaw
Reese, Leal Wiley	LA		Urbana
Reeves, Harry Payne	LA (SS)	107½	Urbana
Reeves, Herman Thornton	Agr	107	Citronelle, Ala.
Rehling, Charles Henry	Agr	29½	Waterloo
Reichard, Della May	LA	38½	Urbana
Reid, Ernest Alexander	EE	74	Deer River, Minn.
Reid, Mollie	SS	133½	Ozark
Reid, Olive Gertrude	Agr sp	8½	Urbana
Reilly, Raymond Thomas	MSE	75	Waukegan

Reimert, Robert Rutter, Jr.	AE	94	Chicago
Rein, Fritz	Agr	137	Gilman
Reinel, Bert Edward	LA		Streator
Reinhart, Irvin Julius	Agr sp	32	Alhambra
Reisner, Charles Leonard	Agr (SS)	110	Sterling
Reitz, Walter Richard	ME	116	Chicago
Remsberg, William Norris	Ch		LaMoille
Renner, Julia Elizabeth	LA	32	Urbana
Renner, Sylvia Pearl	HSAgr	62	Urbana
Reno, Guy Benjamin	LA	35	Browning
Renwick, George W	ME	5	Chicago
Requarth, Clarence Fredrick	AE		Decatur
Reuling, Fred William	BLA	60	Morton
Reum, Hope Edwin	CE	113	Chicago
Rexwinkle, Daphne Margaret	Mus	59	Vandalia
Rexwinkle, James	A		Vandalia
Rhea, Chleo James Jares	EE	55½	Jacksonville
Rice, Grover Colvin	S	81	Irving
Rice, Hugh Monroe	Agr	63½	Gillespie
Rich, Donald Bert	Agr	33½	Chicago
Rich, Ernest Albert	L	57	Washington
Rich, Irwin DeForest	A		Cedar Rapids, Ia.
Rich, John Lindsay	BLA		Farmer City
Rich, Paul Cobb	ChE	75	Chicago
Richards, Helen Marie	S	73½	Joliet
Richards, Lenore	HSLA	56	Urbana
Richardson, Charles	Agr	70	Louisville, Ky.
Richardson, Frank B, Jr.	Agr	48	Chenoa
Richardson, Juanita Bonnie	HSAgr (SS)	20	Danville
Richart, Frank Erwin	CE	74	Urbana
Riche, Arthur Louis	EE	124	Nora Springs, Ia.
Richey, Friedel Chapin	Agr	52	Chicago
Richmond, George Kerns	BLA	34½	Prophetstown
Ricks, Helen Gladys	SS	4	Iowa Falls, Ia.
Riddle, Lillian	LA	101	Mattoon
Ridgley, Temple Elliott	SS	131½	Springfield
Riesmeyer, Fred Haase	Agr		St. Louis, Mo.
Riff, David Morris	CE	75	Chicago
Rigg, Granville Leroy	Agr sp (SS)	36½	Goldengate
Riggs, Ray Vere	Agr	56½	Jerseyville
Righter, Nellie Pauline	LA (SS)	92½	Champaign
Righter, Pearl Geneva	LA sp	33	Sauernin
Rinaker, Dorothy Sue	HSLA	28	Springfield
Ripley, Jean Kimberly	Agr	62	Chicago
Rising, Blanche Josephine	LA	27	Champaign
Ritchey, Royal Wane	Agr	33	Urbana
Ritter, Ferdinand Theodore	EE	44	St. Louis, Mo.
Ritter, Glenn Arthur	LA		Vandalia
Ritts, Charles Laurance	A	37	Oblong
Rives, Nannie Baxter	LA sp	28	Rockbridge
Robbins, Ruth	HSLA	33	Congress Park
Roberson, Mary	SS	8	Mound City
Robert, Jules Henry	ME	75	Lacon
Roberts, Asbury	SS	10	St. Louis, Mo.
Roberts, Elmer	Agr (SS)	105	Burnside, Ky.
Roberts, Erma Dorothy	HSAgr	66	Chicago
Roberts, Harold Higbee	ME	60	White Hall
Roberts, Harry Vivian	AE	134	Morning Sun, Ia.
Roberts, Irvin Levi	SS	16½	Springfield
Roberts, Kathleen Alice, A.B., 1906	SS		Champaign
Roberts, Lois Madeline	SS	102½	Decatur
Roberts, Nellie Read	LA	113	Champaign
Robertson, Eva Love	LA	101	Morrison
Robertson, Louis Harry	CE	55	Blue Island
Robertson, Nellie Mabel, A.B. (Moore's Hill Coll.) 1900	Lb	48	Deputy, Ind.

Robinson, Albert William	ME		Oak Park
Robinson, Florence Elinor	LA	104	Urbana
Robinson, Henry Duncan	BLA	29	Rockford
Robor, Rena	SS	6	Mt. Vernon
Robrock, Lawrence Martin	ChE	41	St. Louis, Mo.
Rockhold, Kenneth Edward	CerE	72	Burlington, Ia.
Rockrohr, William	BLA	5	Dolton
Rockwell, Sylvester Thomas	CE	36	Rock Island
Rodemeyer, Benjamin Eusebius	ME (SS)	71½	Sterling
Rodgers, Perry Harrison	BLA		Atwood
Roe, Harry Austin	ME	35½	Lancburg, Sask.
Roefler, Charles Martin	Cer (SS)	46	Elgin
Roesner, Hedwig Elizabeth	Mus (SS)	11	Moline
Roessler, William Otto	Agr		Shelbyville
Rogers, Gardner Spencer	Agr		Evanston
Rogers, Harry Barrett	CE	42½	Oak Park
Rogers, Harry Thomas	AE		Champaign
Rogers, Russell David	AE		Pekin
Rohde, Minnie Eleanore	HSAgr		Bement
Rohlfing, Alfred Robert	BLA	71	Groveland
Rohlfing, Walter Louis	Agr		Groveland
Rohn, Fred Andrew	AE		Chicago
Rohrbough, Frank Charles	CE	108	Kinmundy
Rohrer, Frank Phillip	ChE	32	Gilman
Roland, Lela Mae	HSAgr		Champaign
Roland, Vern Anton	AE	73	Champaign
Rolfe, Amy Lucile, A.B., 1908	Mus		Champaign
Rollo, Robert Penman	L	80	Murphysboro
Roman, Oscar	Agr	65	Granite City
Romeiser, Alvin	BLA		Belleville
Romine, Joseph Fred	Agr	36	Atwood
Roodhouse, Henry	Agr		White Hall
Root, Kimball Valentine	Cer	58	Chicago
Rooth, Carrie Lee	LA (SS)	86	Joy
Ropiequet, Wilfred Crouch	LA	75	Belleville
Rose, Harold Boone	ME	30½	Urbana
Rosenberg, Herbert Bernard	Agr		Granite City
Rosenkrans, Carl Otto	Agr sp	10	Pawpaw
Rosenthal, Joseph D	Agr		Chicago
Rosenstone, Reuben Eric	Agr		Cambridge
Ross, Clarence Samuel	S	111½	Joplin, Mo.
Ross, Gertrude Duncan	SS	4	Philo
Ross, Glenn Thompson	BLA	84	Urbana
Ross, Kenneth Lwight	LA		Grand Island, Neb.
Ross, Robert Malcolm, A.B., 1905, M.D., 1906	S	130	Chicago
Ross, Roy Meneley	LA	81	Urbana
Ross, Thomas Allen	Agr	34½	Chicago
Rossett, Louis	EE	85	Chicago
Roth, Ben J	S		Chenoa
Rothgeb, Jessie Blanche	HSLA	66	Wellingtton
Rothrock, Howard Moore	EE		Chicago
Rottger, Russel Curtis	LA	101	Springfield
Rounds, Fred Grant	A	40	St. Paul, Minn.
Rourke, Ellen M	SS	26½	Springfield
Rourke, Margaret Elizabeth	SS	7	Springfield
Rowe, Clinton Albert	Agr		Linton, Ind.
Rowe, Enos Marion	Agr	68	Shoals, Ind.
Rowe, Eugene Chauncey	EE	102½	Veederburg, Ind.
Rowe, Richard Yates	LA (SS)	96½	Jacksonville
Rowland, Leslie William	LA		Oak Park
Roy, Herman Emil	A		Chicago
Roy, Sury Kanta	S	60½	Lucknow, India
Ruby, George Benjamin	ChE	31	Yorkville
Ruby, Irving Randolph	ChE	116	Yorkville
Ruckel, John Garland	Agr	55½	Springfield



Rucker, Herbert Judson	<i>Agr</i>	126	Jacksonville
Rue, Orlie	<i>ME</i>	37	Mattoon
Rueff, Joseph Alvin	<i>ME</i>		Oak Park
Rugg, Earle Underwood	<i>LA</i>	26½	Fitchburg, Mass.
Ruhl, William Allen	<i>Agr</i>	34	Baltimore, Md.
Rukin, Max	<i>BLA</i>	21	Cleveland, Ohio
Rumery, Fay	<i>Agr</i>	121½	Oregon
Rundles, Charles Morton	<i>LA</i>	25	Huntertown, Ind.
Rundles, Earl	<i>CE</i>	116½	Huntertown, Ind.
Rundles, Lloyd William	<i>EE</i>	32½	Huntertown, Ind.
Runk, Oliver	<i>ME</i>	85	Sterling
Rush, Francis Edward	<i>SS</i>	83	Galesburg
Rush, Ira Leon	<i>A</i>	57	Minot, N. D.
Rush, Roy Leslie	<i>LA</i>	34	Council, Idaho
Russell, Frances	<i>HSAgr</i>		Urbana
Rust, Louis John	<i>EE</i>		Pekin
Rusy, Ben Franklin	<i>Agr</i>		Chicago
Rutenber, Frances Marie	<i>HSLA</i>	34	Champaign
Ruth, Rowland William	<i>ME (SS)</i>	41	Aurora
Ruth, Thomas Lenor	<i>L</i>		San Jose
Rutherford, Eugenia Elizabeth	<i>LA</i>	59	Newman
Rutledge, Burch Irwin	<i>S</i>		Chatsworth
Ryther, Henry White	<i>ME</i>	71	Chicago
Sackrider, Charles Norman	<i>ME</i>	75	Ishpeming, Mich.
Sackrison, Julius Alvin	<i>Agr sp</i>	34	Batavia
Sadler, Walter Clifford	<i>RCE</i>	119	Elgin
Saffell, Gladys Deforest	<i>Mus sp</i>		Urbana
Sager, Anna Ellen	<i>HSS sp</i>	34	Belvidere
Sailor, Ira Carl	<i>Agr</i>	27	Cissna Park
St. Lawrence, James R	<i>Agr</i>	33½	Chicago
Sakrzewsky, Fred William	<i>Agr</i>		Chicago
Salazar, Jose Urbano	<i>Agr</i>	75	Chihuahua, Mexico
Salisbury, Earl Miller	<i>BLA</i>	20	Albion, Pa.
Salisbury, Ethel Imogene	<i>LA</i>	101	Woodstock
Salisbury, George Washington	<i>Agr</i>	65	Astoria
Sallee, Gordon Francis	<i>ME</i>		Litchfield
Sallee, Roy Merridith	<i>SS</i>	68	Gerlaw
Sampson, Inez Estella	<i>HSS</i>	22	Washington
Sampson, Lloyd Carson	<i>L</i>		Washington
Samuels, Thomas Walter, A.B., 1906, A.M., 1912	<i>L</i>	24	Carrollton
Samuelson, Raphael Adelford	<i>EE</i>	31½	Elgin
Sandall, Ernest Eugene	<i>Agr</i>	99½	Burlington
Sanders, George Edward	<i>Md</i>	31	Champaign
Sanders, Laura Marie	<i>HSS</i>	101	Champaign
Sanders, Ralph Lloyd	<i>CE</i>	69	Glasford
Sanford, Harriet Adelaide	<i>HSLA</i>		Danville
Sangdahl, George Stanley	<i>CE</i>	114	Chicago
Saperston, Q Nathan	<i>EE</i>	75	St. Charles
Sargeant, Southworth Samuel	<i>L</i>	81	Geneva
Savage, Arthur Dale	<i>Agr</i>	64½	Champaign
Savage, Lillian Waters	<i>LA</i>	81	Belleville
Savage, Marie	<i>LA</i>	35	Urbana
Savage, William Elliott	<i>Md</i>		Belleville
Saville, Edward William	<i>Agr sp</i>		Canton
Sawyer, Henry Greeley	<i>ChE</i>	55	Monmouth
Sawyer, Margaret	<i>HSAgr</i>	61	Norborne, Mo.
Sax, Carroll William	<i>LA</i>		Chicago
Saxton, Catherine	<i>HSAgr</i>	56	Pueblo, Colo.
Sayre, Charles Bovett	<i>Agr</i>	115	Chicago
Scales, Walter Howard	<i>AE</i>	76	Fort Worth, Tex.
Schaarman, Emil Ferdinand	<i>LA sp</i>	36	Edgington
Schadt, Mabel Eva	<i>HSS</i>	66½	Leesburg, Ind.
Schaefer, Edgar Frederick	<i>LA</i>		Quincy
Schaffer, Otto George	<i>Agr</i>	61½	Lake Forest
Schalck, Edward Michael	<i>S</i>	98	Chicago

Schaller, Emma Eugenia	HSLA	66	Mendota
Schaller, Gilbert Simon	ME	28	Mendota
Schaulin, George Marvin	Cer	28	Mazon
Schecter, Ralph Wendell	LA		Danville
Scheele, Donald Charles	ME	36	Elgin
Scheid, Jacob Philip	SS	131½	Freeburg
Scheidecker, Glenn W Smiley	BLA	82	Sycamore
Schenck, Ralph Edwin	A (SS)	23	Urbana
Schetsnitz, Hymen	BLA	38½	Chicago
Schickendanz, Louis Herman	ME		Chenoo
Schiesswohl, Philip George	BLA	28	Chicago
Schiesswohl, Ralph Louis	BLA	2	Chicago
Schiffbauer, Gretchen	HSAgr sp	27	Benson
Schinnerer, Otto Paul	LA	103	Bay City, Mich.
Schlader, Edward Holmes	EE		Oak Park
Schlutius, Louise Gustava	LA (SS)	8	Gilman
Schmidt, Lorentz	A	123½	Clyde, Kansas
Schmidt, Paul Marvin	BLA		Earlville
Schmitz, Erwin Anthony	CE	131	St. Louis, Mo.
Schmitz, Nicholas Joseph	EE	71½	Madison, Wis.
Schneider, Arthur Charles	CE		Galena
Schneider, Daniel Charles	ME	54	Nokomis
Schneider, Henry Frank, A.B. (Central Wesleyan Coll.) 1910	SS		Nokomis
Schnellbach, John Francis	MSE	106½	Dixon
Schnitker, Roger Reed	S		Chrisman
Schobinger, Eugene	MSE	37	Morgan Park
Schoessel, Carl Arthur	ME	114	Rock Island
Scholl, Clarence	ChE (SS)	109	Watseka
Scholl, Raymond Stanley	Agr		Pittsburgh, Pa.
Schoolcraft, Plascie Lafayette	LA (SS)	94	Chester
Schoonover, Warren Rippey	Agr	120	Alhambra, Cal.
Schöpferle, Richard Joseph	Ch	64	Oil City, Pa.
Schrader, William Louis	CE sp	7	Chicago
Schrier, Emil Paul	AE	82	Verdigris, Neb.
Schroeder, Glenn Wilson	Agr	69½	Joliet
Schucker, Rudolph Wester	A	117	Mt. Carmel
Schueler, Herbert	ME		LaSalle
Schuette, Otto	Agr		Chicago
Schuh, Darrel Smith	BLA		Cairo
Schumacher, Harry William	Md		Altamont
Schurecht, Harry George	Cer	61	Chicago
Schutte, William George	ME		Marseilles
Schuyler, Andrew Livingston	EE	62	Clinton, Ia.
Schwartz, Louise Fenimore, A.B. (Knor Coll.) 1907	Lb		Knoxville
Schwartz, Rudolph Alfred	Agr		Urbana
Schwarzkopf, Horace Valentine	Agr	28	Chicago
Schwing, Edward Albert	Agr (SS)	45½	Peoria
Scott, Clarence Vincent	Agr		Oak Park
Scott, Ernest Somers	EE	75	Oak Park
Scott, Neva Augusta	LA		Urbana
Scott, Ralph Cleland	SS	129	Berwyn
Scott, Robert Ashmore	Agr		Paris
Scott, Shirley Edward	LA	15	Anderson, Ind.
Scudder, John Laurence	Agr		Ogden, Utah.
Searing, John Henry	L	27	Carbondale
Searles, Donald Kenneth	Agr		LaGrange
Sears, Ogal Hesse	Agr	78	Oblong
Secor, Edmund Clay	Agr	76	Carrollton
Seed, Harry Raymond	Agr		Billet
Seed, Oscar Vern	L		Lawrenceville
Seeley, Esther Beulah	SS	123½	Normal
Seeley, Robert Mayer	BLA		Freeport
Seibel, Glee Page	BLA		Manlius
Seidenberg, Nathan Cook	L	28	Peoria

Seifried, Arthur George	Cer		Chicago
Seiler, George William	SS	128	Woodstock
Seip, Ernest Walter Joseph	ME	98	Chicago
Sekine, Sentaro	ME	129	Kodama, Saitama, Japan
Sellards, William Heine	Agr	15	Champaign
Sells, Simeon Wells Johnson	LA	13	LaGrange
Semple, Arthur Truman	Agr		Riverton
Sendenbrugh, Edith Irene	LA	99	Champaign
Senneff, George Freeman	Agr	32½	Rock Falls
Sense, William Joseph	A	46½	Waukegan
Senter, Lester Thomas	Agr		Oakland
Severinghaus, Milton George Henry	BLA	100½	Chicago
Seward, Hiram Bricker	Agr		Indianapolis, Ind.
Sewell, Sidney Isaac	CerE	100	Belvidere
Seyster, Ernest Lawrence	LA	29½	Kempton
Seyster, Mildred Clayton	S	121	Kempton
Shaffer, Charles Franklin	EE	30	Quincy
Shaffer, Rolla Fleming	Agr		Jeffersonville
Shapland, Earl Page	ME	108	Saundermin
Sharman, Jnanendra Nath	LA sp		Calcutta, India
Sharp, Bertha Lee	LA	134½	Urbana
Shaw, Edward Byer	Ma		Urbana
Shaw, Ellis Marsh	AE	66	Rockford
Shaw, Harold Allen	Agr		Urbana
Shaw, Hazel Yearsley, A.B., 1907, A.M., 1908	Lb		Urbana
Shaw, Ray Iris	Agr	32½	Princeton
Shedden, Donald Boyd	Agr		Elgin
Sheets, Frank Thomas	MSE	75	Palmyra, Mo.
Sheetz, A Vernon	BLA		Freeport
Shelby, Edwin, Jr.	CE		New Orleans, La.
Sheldon, Henry Kellogg	EE	37	Sharpsburg
Sheldon, Walter William	S		Winnebago
Sheldon, Warren Maxwell	Agr	67½	Sharpsburg
Shellabarger, David Stuart	BLA	26	Decatur
Shellabarger, William Lincoln, Jr.	ChE		Decatur
Shelton, Wilma	SS	97	Terre Haute, Ind.
Shen, Wen-Yu	Agr (SS)	93	Shantung, China
Shepard, Anna Lucile, A.B. (Iowa State Univ.) 1910	Mus		Muscatine, Ia.
Shepperd, James Douglass	EE	96	Peoria
Sherman, Carl Lee	CE	37	Sandoval
Shewhart, Walter Andrew	S	103	New Canton
Shields, Eugene Clifton	SS	20½	Mazon
Shields, Harold Johnson	ME	20	Sullivan, Ind.
Shields, John Erwin	Agr		Lewiston
Shields, John P	AE	36	Washington, Ia.
Shields, Mrs. Mabel Hughes	SS	5	Mazon
Shipman, William Davis	CE	57	Seattle, Wash.
Shively, Jean	SS	24	Champaign
Shively, Walter Scott	ME	37	Chicago
Shobe, Claire Fletcher	LA		Chicago
Shobe, Frank Dilling	L	57	Urbana
Shoemaker, Fred Glen	EE	89	Abingdon
Shonle, Horace Abbott	ChE	34	Tuscola
Shonts, Turrill Dean	BLA	28	South Bend, Ind.
Shook, Charles Harmon	AE	26	Champaign
Shotwell, Ida Mae	HSS	69½	Evanston
Shuck, Helen	LA		Urbana
Shultz, Edith Adeline	LA	92	Chicago
Shultz, Hazel Marguerite	HS Agr	95	Rockford
Shulz, Ernest Rudolf	Agr sp		Moscow, Russia
Siebens, Arthur Robert	Agr	32½	Minonk
Siegfried, Edward Olaf	AE	34	Chicago
Siemen, Bertha Anna	LA	95½	Stockton

Siemen, Webb Mellin	A	13½	St. Joseph, Mo.
Sievert, Carl William John	ChE (SS)	98	Blue Island
Sigerson, Wilfred Carl	LA	67	Mason City
Silkman, John Mead	MnE	44	Baltimore, Md.
Sill, Leo Lester	Mus		Champaign
Simison, Earnest Newton	Agr sp		Chicago
Simmonds, Emry Seldon	EE		Camp Point
Simmons, Theodore Switzer	Agr		St. Charles
Simms, William Henry	Agr	23	Gibson City
Simon, Walter Henry	A	36	Quincy
Simonich, John Lawrence	EE	73	Joliet
Simons, Raymond Samuel	S	92	Chicago
Simonson, Guy Loraine	Ch (SS)	62½	Downers Grove
Simpson, Arthur Moulton	ME	124	Chicago
Simpson, George Eric	Ch (SS)	102	Chicago
Sims, Clarence Edgar	ChE	35	Chicago
Sims, Delbert Edward	LA		Newton
Sisam, Mrs. Cora Hutton	SS	130	Urbana
Sizer, Albert Dann	Agr	37½	Champaign
Sizer, Bruce Lucius	ME		Champaign
Skadden, Harvey Frank	A	60	Danville
Skemp, Samuel Charles	Agr (SS)	46	Maywood
Skiles, James Roy	SS	130	DeKalb
Skinner, Edward Ainsworth	A	12	Oak Park
Skinner, Hazel	LA		Garden City, Kan.
Skinner, John Knox	SS	111½	Nashville
Skinner, Winifred Voorhees	SS	8	Nashville
Skoglund, Carl August	ME	103	Ishpeming, Mich.
Slack, Herbert Lee	CE	35	Chicago
Sladek, Edward Frank	Cer		Cicero
Slater, Frank Charles	LA	71	Cherry Valley
Slater, Maynard Elmer	Agr	32	Belvidere
Slayton, Willis Francis	Agr		Benton Harbor, Mich.
Sloan, Fred Lewis	Agr sp		Ray
Smart, Robert Leroy	CE (SS)	75	Davenport, Ia.
Smejkal, Frank John	Agr	91	Chicago
Smiley, Lionel David	EE		Woodstock
Smith, Adeline Mildred	LA	4½	Champaign
Smith, Mrs. Adelle Catherine	Mus sp		Richmond Beach, Wash.
Smith, Alfred Dale	EE	109	Champaign
Smith, Blanche Margaret	HSAgr	56	Urbana
Smith, Bertram, Ph.B. (Brown Univ.) 1910	Lb	10	Urbana
Smith, Bryce Dumond	Agr		Earlville
Smith, Charles Eugene	CE	17	Chicago
Smith, Cecil Weldon	MnE	113	Clifton
Smith, Donald Jenks	EE	74	Chicago
Smith, Edwin Allan	EE		Chicago
Smith, Elizabeth Moree	Mus	28	Urbana
Smith, Florence Mildred	HSAgr	55	Oak Park
Smith, George Walter, Jr.	AE	49½	Wilber, Nebr.
Smith, Georgiana Dieckmann	HSLA		Vandalia
Smith, Gladys May	LA	65	Champaign
Smith, Harold Gilman	CE	23	Monmouth
Smith, Hazel	HSAgr	39	Urbana
Smith, Hazen Eager	Agr sp		Prattville, Ala.
Smith, Hubert Argo	A		Urbana
Smith, Irene Fern	Ch		Red Bud
Smith, Julian Francis	Ch		Champaign
Smith, Leo Lloyd	Agr		Loda
Smith, Leoti Vannie	LA	31	Champaign
Smith, Lloyd Gaston	ME	110	Chicago
Smith, Marquis Joseph	Agr	72	Burdett, N. Y.
Smith, Mary Parnell	HSAgr		Cuba
Smith, Merle LeRoy	BLA		Freeport

Smith, Paul McCorkle	SS	109	Bloomington
Smith, Paul Miller	Agr	63½	Lincoln
Smith, Raymond Stratton, B.S. (Pomona Coll.) 1907	Agr	192	Moorpark, Cal.
Smith, Reuel Lhamon	ME	75	Champaign
Smith, Robert, Jr.	ME	116	Chicago
Smith, Royal Lee	CerE	10	Detroit, Mich.
Smith, Samuel Theodore	BLA	25	Conway, Ark.
Smith, Stanley Christopher	BLA	62	Clayton
Smith, Stewart Tracy	AE	36½	Rose Hill, Ia.
Smith, Stuart Luthy	Md		Pittsfield
Smith, Volney Potter	Agr	68½	Yorkville
Smith, Wilhelma Zoe	LA	35	Champaign
Smith, Wilson Marshall	LA		Waverly
Smithson, Albert Thornton	A (SS)	73½	Lacon
Smock, Alice Bernice	HS Agr		Chicago
Smoot, Elizabeth Ellice	Mus	45	Fithian
Snapp, Roscoe Raymond	Agr (SS)	127½	Findlay
Snider, Howard John	Agr	91½	New Richmond, O.
Snoddy, Raymond Leffel	L		Perrysville, Ind.
Snook, John Donald	ChE	41	Sidney
Snook, Vera Jessie, A.B., 1911, A.M., 1912	Lb	142½	Ottawa
Snyder, Glenn	Agr		Billet
Snyder, Logan Abraham	Agr	55	Kankakee
Soderberg, Andrew Frederick	AE	120	Florence, Wis.
Sorensen, Niels Chester	A	122	Monticello, Minn.
Soto, Raafael Arcangel, B.S., 1912	LA	146	Sabona Gr., P. R.
Souers, Marshall Ankeny	Agr (SS)	95½	Des Moines, Ia.
Spalding, Burleigh Mason	A	1	Bismark, N. Dak.
Spalding, Roscoe Conkling	A	21	Fargo, N. Dak.
Spalding, Russell Albert	Agr	53½	Champaign
Sparling, Donald Carl	A		Hammond, Ind.
Spear, Elsie Travilla	HSS	66	Rock Falls
Spear, Harry George	SS	9	Assumption
Speck, Roy Henry	A	16	Evansville, Ind.
Spence, Frederick Milton	EE	72	Elmwood
Spencer, Charles Blakley	A	102½	Champaign
Spencer, Victor Elwin	Agr	32½	Lockport
Spitler, Clarke H	BLA	99	Sullivan
Sponsel, Mrs. Eleanor Aldrich	LA	61	Champaign
Spornlein, Louis Wolfgang	AE (SS)	75	Chicago
Sprague, Harold Greene	A	69	Des Moines, Ia.
Spraker, Glen Allen	AE		Kokomo, Ind.
Springer, Jonathan Lee	Agr sp		Averyville
Sprowls, Luna Lenore	SS	78	Gibson City
Squier, Leon Walter	ME	60	Rockford
Staat, Fielding Bond	Agr	30	Monmouth
Stabler, Jesse Lee	Agr	65½	Neponset
Stacheli, Otto	ChE		Chicago
Stafford, Herbert Stanley Levin	MnE	77	Hubbard Woods
Stahl, Myrtle Lois	LA	60	Victoria
Stahl, Walter Andrew	ME	6	Chicago
Stallings, Leland Stanford	Agr	104½	Granite City
Stambaugh, Fred Minton	L sp	28	Deland
Stanberry, Jesse Oscar	SS	9	Homer
Stanberry, Stanley Ray	ME		Mason City, Ia.
Stark, John Edwin	S	63	Urbana
Starkey, Albert Lyle	SS	38½	Pestotum
Starnes, Verner	Agr		Carlisle, Ind.
Starr, Bernice Fallis	LA	64	Decatur
Starrett, David Burnham	Agr		Elgin
Staubitz, Louis Pierce	EE (SS)	70½	Urbana
Stearns, Carl Garner	LA	73	Rankin
Stearns, Guy Thomas	Md		Champaign
Stebbins, John Marcus	Agr		Chicago

Stebbins, Selden Lewis	EE	81	Chicago
Steele, Lottie Emily	Agr	98	Galesburg
Steele, Theron Broder	Agr	78	Robinson
Steif, Benjamin Leo	A		Chicago
Stein, Max Julian	Agr sp	33	Chicago
Steinbreder, William John	SS	143	St. Louis, Mo.
Steinmayer, Alwin Gustav	EE		LaSalle
Steinmayer, Reinhard A, Jr.	CerE		LaSalle
Steinmeyer, Herbert August	BLA	47	St. Louis, Mo.
Stene, Ole	ChE		Elgin
Stephens, Ethel Gertrude	SS	22½	Murphysboro
Stephens, Nora Ruth	LA		Browns
Stephens, Roger Lewis	L	40	Robinson
Stephens, Warren Russell	L	16	Urbana
Sterenber, Bert Ludeus	Agr	33	Fulton
Sterling, George Edward	AE		Manitowoc, Wis.
Stevens, Alexander Henry	CE		Chicago
Stevens, Gladys Agnes	Mus	98½	Urbana
Stevens, Homer	Agr sp		Fairland
Stevens, Raymond Monroe	A	95½	Syracuse, N. Y.
Stevens, Richard William	Agr	26	Joliet
Stevens, Sabra Elizabeth, A.B., 1906	Lb	168	Mahomet
Stevens, Vernon Thompson	BLA	52	Joliet
Stevens, Wayne McKenzie	Agr	37	Taylorville
Stevens, Wentworth Holt	Agr	75½	Urbana
Stevenson, Augustus George	Md	28	Harvey
Stevenson, Cohn Ayres	ME	59½	Chicago
Stevenson, James	Cer		Chicago
Stevenson, James Vail, A.B., 1912	Agr	152½	Streator
Stever, Mildred Pearl	HSAgr		Henry
Stewart, Allen	Agr		Oak Harbor, Wash.
Stewart, Earle Henry	RME	36	St. Louis, Mo.
Stewart, Harold Burton	A	126	Oak Harbor, Wash.
Stice, Henry Sylvester	SS	43	Urbana
Stice, Kenneth Seymour	CerE	9	Urbana
Stickler, John Harrison	Cer		Canton
Stickney, Ida Meribeth, A.B. (Beloit Coll.) 1904	Lb		Warren
Stinson, Lavinia Shriver	HSLA	72	Macomb
Stipp, Blanche	Mus	34	Champaign
Stipp, Frank Vennum	S	115½	Champaign
Stirton, James Crear	CE	3	Chicago
Stitt, Raymond DeVries	EE	79	Morgan Park
Stockler, Harry Frederick	CE		Highland
Stocks, Mary Belle	HSAgr	14	Garden City, Kan.
Stokes, Louis O'Connor	ME		Anna
Stoltey, Marie Jennie	HSLA	93	Champaign
Stone, Albert Getten	AE	4	Chicago
Stone, Othello Raymond	A	80	Urbana
Stone, Tom Candy	Agr	67½	Stonington
Stonier, Don Duane	Agr	34½	Urbana
Stopp, Gerald Darfield	LA	35	Plainfield
Storey, Lester John	Agr sp	24	Shabbona
Stough, Glenn Howenstein	MSE	109½	Overland Park, Kan.
Stout, Earl Boyd	ME	37	Freeport
Stoutzenberg, Florence Thomas	HSAgr		Greenville
Stover, Orville Orlando	Agr sp		Mahomet
Strang, Robert Leon	Agr sp	34	Antioch
Strathman, John Herman	Agr	28½	Pekin
Stratton, Bernice Elizabeth	HSLA		Chicago
Stratton, Grace Bruce	LA		Evansville, Ind.
Stratton, William Thomas	ChE	5	Stevensville, Mont.
Streed, Elsie Judith	HSLA	66½	Waukegan
Streff, Harold Peter	AE	25	Chicago
Strehlow, Paul Valentine	AE	114	Peoria
Streitmatter, David Robert	Agr sp	19	Edelstein

Strickland, Ray Malcom	<i>Agr</i>	30	Urbana
Strock, Faraday James	<i>CE</i>	37	Sterling
Stroheker, Frank Sewald	<i>LA (SS)</i>	78½	Barry
Strong, Arthur Crist	<i>L</i>	28	Urbana
Strong, Charles Howard	<i>BLA</i>	28	Earlsville
Strong, George Woodworth	<i>Agr sp</i>	32	Joliet
Strong, Harry Danford	<i>Agr</i>	58	Keithsburg
Strong, Olive French	<i>LA</i>	30	Canton
Strong, Robert Ambrose	<i>ME</i>	37	South Bend, Ind.
Strong, Truman Jefferson	<i>A</i>	10½	Spokane, Wash.
Strong, William Augustus	<i>S</i>	70	Joliet
Struhsacker, Irene Alice	<i>HSAgr</i>	10	Chicago
Stubblefield, Benjamin Harrison	<i>Agr</i>	35½	Bloomington
Stumpf, Elmer Henry	<i>BLA</i>		Chicago
Sudduth, Kenwood Titus	<i>Agr sp</i>	1	Springfield
Suffern, Emmette Palmer	<i>BLA</i>		Atwood
Sullivan, Nicholas Cyril	<i>CerE</i>	24	Chicago
Summers, Abel Ross	<i>EE</i>	41½	Des Moines, Ia.
Summers, Henry Elmer	<i>Agr sp (SS)</i>	7½	Opdyke
Sundell, Dean Harold	<i>BLA</i>		Mason City, Ia.
Sunderland, Emily Kingman	<i>HSLA</i>	75½	Delavan
Supple, Margaret	<i>SS</i>	47½	Danville
Suryieh, Izzet Basili	<i>Agr</i>	86½	Sakha, Egypt
Suter, Earl Ray	<i>EE</i>	74	Golden
Sutherland, George Fred	<i>S (SS)</i>	101	Grand Island, Neb.
Sutherland, Wilbur Mills	<i>Agr</i>		McNabb
Suto, Ko	<i>Ch</i>		Niitsu, Japan
Sutton, Frank Howard	<i>BLA</i>		Chicago
Swannell, William Laurence	<i>EE</i>	43	Kankakee
Swanson, Claude Magnus	<i>L (SS)</i>	37	Ludlow
Swanson, Frances Eleanor	<i>LA</i>		Urbana
Swanson, Frederick Curtis	<i>LA</i>	86	Urbana
Swanson, Norvid Raymond	<i>Agr</i>		St. Charles
Swanson, Ralph Arthur	<i>Cer</i>		Streator
Swartwout, Edgar Chessman	<i>Agr</i>		Elgin
Swartz, Leon Frank	<i>Agr</i>	16	Urbana
Sweeney, Perry Jerome	<i>FE (SS)</i>	40	Caledonia
Sweitzer, John Willard	<i>L sp</i>		Morton
Swenson, Edwin Henry	<i>CE</i>	111	Chicago
Swett, Leslie Wells	<i>MnE</i>	89½	Blue Island
Swett, Lewis Wentworth	<i>EE</i>	10	Springfield
Swick, Mary Ethel	<i>LA (SS)</i>	28	Urbana
Swick, Nellie May	<i>LA</i>		Urbana
Swickard, Earl Oscar	<i>BLA</i>	27	Newman
Swigart, Wayne Hugh	<i>Agr sp</i>		Farmer City
Swigert, Blanche Belle	<i>LA sp</i>		Rapatee
Swits, Marguerite Maud	<i>LA</i>		Terre Haute, Ind.
Switzer, Theodore Ernest	<i>L</i>	19	Macomb
Swope, Russell Claude	<i>LA</i>	37	Kankakee
Sykes, James Thorburn	<i>SS</i>	47½	Beverly
Sykes, Webster	<i>Agr sp</i>		Baylis
Taber, Bayard Freeman	<i>A</i>	105	Urbana
Taggart, Frank, Jr.	<i>Agr</i>	67½	Wooster, O.
Talbert, Harold Arthur	<i>BLA</i>	35	Garrett, Ind.
Talbot, Mildred Virginia, A.B., 1912	<i>LA</i>		Urbana
Tanner, John Riley	<i>A</i>		Springfield
Tanner, Thomas	<i>AE</i>		Dwight
Tapping, Charles Hawley	<i>A</i>	63	Peoria
Tarble, Charles Nelson	<i>Agr</i>	128	Hot Springs, Ark.
Tarnoski, Alexander Stephen	<i>SS</i>	95	Chicago
Tarracciano, Alexander Eli	<i>EE</i>	76	Chicago
Tate, Fred Reeves	<i>L</i>	54	Chicago
Tate, James Alfred	<i>Agr (SS)</i>	50	La Junta, Colo.
Taubeneck, Victor Everett	<i>EE</i>		Marshall
Taylor, Arthur Cullen	<i>SS</i>	5½	Cincinnati, O.
Taylor, Mrs. Edith Crater	<i>SE</i>		Braceville

Taylor, Elizabeth Boyers	SS	5	Urbana
Taylor, Everett Harvey	S	104½	Lancaster, Wis.
Taylor, Ferdinand James	SS	2	Braceville
Taylor, Horace Albert, Jr.	L sp	20	Metropolis
Taylor, Hazel Emma	HS Agr	96½	Chicago
Taylor, Marcus Prevost	CE	108	Alton
Taylor, Margaret	SS	98½	Chicago
Taylor, Milo Cornelius	CE	59	Urbana
Taylor, Morris R	Ch		Louisville, Ky.
Taylor, Ralph Bridgeman	EE		Chardon, O.
Taylor, Ross Wallace	A		Bement
Taylor, Scott Champlin	ChE	111½	Bement
Taylor, Thomas Henry	L	29	Geneseo
Taylor, William Lincoln, A.B., 1912	Agr	139	Lancaster, Wis.
Taylor, William Mitchell	Agr	57	Champaign
Tear, Henry Raymond	EE	83½	Chicago
Telfer, George Averna	Md	30	Litchfield
Tendick, Frank Hulit	ChE		Canton
Teng, Kwangtang	LA	99	Canton, China
Terrell, Lucille Spotswood, A.B., (Tulane Univ.) 1903	Lb		Roanoke, Va.
Terrill, Clarence Thomas	L		Atwood
Terry, Robert Isaac	LA		Indianapolis, Ind.
Thal, Olga Elizabeth	LA (SS)	8	Champaign
Thatcher, DeWitt Wesley	Agr sp	35	St. Charles
Thayer, Cleaver	LA	99	Chicago
Thayer, Helen	SS		Evanston
Thayer, Thaxter Crugier, A.B. (Univ. Wisconsin) 1911	Lb		Vacaville, Cal.
Theilen, Margaret Katherine	LA	101	Camp Point
Thelander, Albert Peter Victor	CE	6	Batavia
Thiele, Ross Henry	A		Ramsey
Thielke, Maude Bertheata	Mus		Monticello
Thomas, Abner Royce	Agr		Urbana
Thomas, Charles Fredrick	Md		Argenta
Thomas, Clair Joel	Agr		LaHarpe
Thomas, Emil Warren	ME	24	Woodstock
Thomas, Glen Herbert	A sp		Waterville, Kan.
Thomas, John Mifflin	ME	77	Vincennes, Ind.
Thomas, Leslie Norwood	ME		Newport, Ind.
Thomas, Lyle	LA	64	Lewiston
Thomas, Marie Anna	LA	31	San Jose
Thomas, Maurice Loyd	EE	4	St. Louis, Mo.
Thomas, Melvin	Agr sp	81½	Letart, W. Va.
Thomas, Polly Elizabeth	LA		Urbana
Thomas, Ralph Raymond	EE	2	St. Louis, Mo.
Thomas, Robert Ellsworth	CE	50	Rockford
Thomas, Victor Christian	Agr sp		Chicago
Thomason, Jay Francis	Agr (SS)	92	Chicago
Thompson, Alfred Franklin	EE		Springfield
Thompson, Charles Henry	CE	81	Chicago
Thompson, Fleta	HSLA	64	Carrier Mills
Thompson, Francis	SS	59½	Pinckneyville
Thompson, George	EE		Anna
Thompson, Harwell Cloud	BLA (SS)	106½	Harvey
Thompson, Harold Earle	EE	76	Chicago
Thompson, Herbert Percy	SS	152½	Champaign
Thompson, John Charles	Agr (SS)	23½	Springfield
Thompson, Lee E	LA		Saybrook
Thompson, Lillian Maud	HSLA		Chicago
Thompson, Orin Griswold	Agr		Springfield
Thompson, Orlando Stephen	Agr		Harvey
Thompson, Ruth Etta	Mus		Urbana
Thomson, Arthur William	AE	67	Plymouth, Ind.
Thomson, Charles Sarmiento	EE (SS)	67	Buenos Aires, Arg.
Thorndike, Clara Louise	SS	7	Chicago



Thorne, Frank Hilton	ME	35½	Berwyn
Thorne, Laurence Emerson	Agr	33	Huntington, Ind.
Thorne, Mabel Elizabeth	S	103	Huntington, Ind.
Thorpe, William Frederick	Agr	13	Chicago
Thrasher, Marvin Allen	SS	27½	Salem
Threlkeld, Clyde Hollis	BLA (SS)	94	Decatur
Thurston, Henry Winfred, Jr.	Agr	31½	New Milford, N. J.
Tibbits, Douglas Deforest	Agr	78½	Urbana
Tiedemann, Edwin Wylde	Agr	25	St. Louis, Mo.
Tillotson, Bess Mae	HSS		Roswell, N. Mex.
Tillson, Arthur Edward	ChE		Naperville
Tilton, Kenneth Dale	ME	75	Moline
Tilton, Leon Deming	Agr	40	E. St. Louis
Tilton, Walter Joseph	Ch		Fairmount
Timmings, Henry A	Agr sp	15½	Chicago
Timmis, Alice Maria	HSAgr	97	Chicago
Tinkey, George Otto	EE		Decatur
Tinzmann, Erich Ludwig	REE	63½	Chicago
Titus, George Leiner	BLA	99	Sullivan
Tobin, Elmer Clayton	EE		Elgin
Todd, Ethel	LA	30	LaHarpe
Tolmie, Thomas William	AE		Rockford
Tompkins, Carrie E	La sp	12	Downs
Tompkins, Elmer Judson	ME		Eagle Grove, Ia.
Tompkins, Rexford De, Ph.G., 1908	Ch	14½	Mt. Sterling
Tong, Harry Yukit	MSE	23	Shanghai, China
Tong, Yung Tso	MSE	60½	Tientsin, China
Tonnesen, Harvey Allen	ME	37	Ishpeming, Mich.
Torgerson, Edward Fritchhoff	Agr	76½	Chicago
Tornquist, Alpha Caroline	LA		Champaign
Torrance, Mary, A.B. (Hanover Coll.) 1900	Lb	45	Lexington
Torrence, Howard John, A.B. (Monmouth Coll.) 1910	SS	11½	Monmouth
Towndrow, Harry Allen	L sp		Moline
Townsend, Rollin Davis	Agr sp		Maquon
Towson, Irene	LA	34	Macon
Trainor, Margherita Madeleine	LA	16	Ottawa
Trantow, Walter Weisse	CE		Batavia
Treadway, Oswald Garland	SS	68½	Macomb
Treichel, Chester	CerE		Kankakee
Tressel, Harry Shults	LA	70	Terre Haute, Ind.
Trevellyan, Helen Elizabeth	Mus		Chicago
Triggs, Leon Alvin	BLA (SS)	63½	Elgin
Trimble, Eliza Frances	HSAgr sp		Evansville, Ind.
Tripp, Belle Chamberlin	Mus	26	Belvidere
Tripp, Jennie Louise	HSAgr	66	Belvidere
Tritt, Frances Irene	HSLA	24	Bloomington
Tritt, Helen Lucille	HSLA	14	Bloomington
Troeger, Phillip Theodore	Agr		Chicago
Trost, Frances Helen	LA	67	Urbana
Trost, Opal Winifred	HSAgr		Urbana
Troster, Oliver John	Agr		Bellflower
Trowbridge, Charles Edgar	ME	36	South Bend, Ind.
Trowbridge, Mary Luella	LA	20	Green Valley
Trowbridge, Tessie Elizabeth	HSAgr	97½	Green Valley
Troxel, Floyd Elsworth	ME	4	Minonk
Troy, Mary Zeliaette, A.B. (Univ. Alabama) 1912	Lb		Tuscaloosa, Ala.
Tsow, Min	MnE		Qwongtung, China
Tucker, Phoebe Caroline	LA	98	Roseville
Tucker, Stephen Kenneth	Md		N. Anderson, Ind.
Tuell, Wallace Gerry	EE		Canton
Turlay, Annie Marie	LA	48½	Clinton
Turley, Robert Edgar, Jr.	CE	99	Richmond, Ky.
Turner, Alexander Harvey	Agr		Loda

Turner, Bessie Irene	LA	61	Loda
Turner, David Adolf	Agr sp	53½	Chicago
Turner, Frank	Agr	69	DuQuoin
Turner, Rhodolphus Kibbe	Agr	65	Butler
Turner, Reuben Raymond	Ch	93	Taylorville
Turner, Samuel Rutherford	L		Virginia
Turner, Walter Carlyle	BLA	48	Atlanta
Turnock, Llewellyn Alvin	A	33	Elkhart, Ind.
Tuthill, John Kline	EE	78	LeRoy
Tyler, James Hersey	CE	17	Champaign
Tylski, Walter William	EE		Chicago
Udinsky, Philip	ChE		Jersey City, N. J.
Ullrich, William	SS	8	New Baden
Underhill, Harold Wertz	A	108	Onawa, Ia.
Uphaus, Bruce Richard	ME	41	Chicago
Urch, Melvin Case	Agr sp	24½	Muskegon, Mich.
Valentine, Howard DeWitt	ChE	104	Chicago
Van Buskirk, Fay Carroll	ME		Mt. Carroll
VanBuskirk, Roy Harold	Agr sp	31	Mt. Carroll
Van Cleve, Mildred May	S	72	Urbana
Van de Mark, Walter Jacob	Ch		Waukegan
Van den Boom, Gerry Christopher	ME	4	Quincy
Vandercock, Henry Peirce	Agr	70½	Lombard
Van Deusen, John LeRoy	CE		Greenville
Van Doren, Frank Eugene	Agr	66½	Urbana
Van Doren, Mark Albert	LA	68	Urbana
Van Frank, Elliott Daniel	A		Danville
Van Natter, Francis Marion	Md		Muncie, Ind.
Van Petten, Oliver William	CE	42	Champaign
Vansant, Rodman Fleming	Agr sp		Chicago
Vansant, William Lawrence	ME	29	Chicago
Vargas, Hippolyto da Silva	LA		Luncira, S. Paulo, Brazil
Vater, Margaret	HSAgr sp	12	Chicago
Vauble, William Carl	Agr (SS)	107	Washington
Vaughan, Glenn Poland	BLA	32	Amboy
Vaughn, Myra	Mus		Urbana
Velzy, Charles R	ME	75	Harvey
Venard, William John	BLA	30	North Adams, Mass.
Verlie, Emil Joseph	L	88	E. St. Louis
Vail, Nathaniel Smith	Agr	27½	La Grange
Vail, Ralph Hoyt	Agr	64	La Grange
Vibelius, Siegfried Nathaniel	AE		Joliet
Vincent, Alice Mae	HSAgr		Mazon
Vincent, Chester Andrus	CE	109½	St. Johns, Ore.
Virgin, Eli Horace	Agr	45	Virginia
Voigt, Herbert Louis	CE	74	Chicago
Volk, Alven Claude	CE	30	St. Louis, Mo.
Von Valtier, Ralph Paul	ME	12	Chicago
Voorhees, Lawrence Elmer	EE		Upper Alton
Vosburgh, William Richardson	BLA	103	Oak Park
Voss, Elizabeth Ann	HSAgr	81	Champaign
Wadsworth, Winthrop Mattison	AE	99	Minneapolis, Minn.
Wagenknight, Oscar Chamberlain	CE		La Grange
Waggoner, Arthur Melinger	A (SS)	106	Decatur
Waggoner, Karl Marshall	A		Decatur
Waggoner, William Eugene	SS	21½	Rankin
Wagner, Alexander	LA	32	Chicago
Wagner, Alvin Louis	BLA	76½	Chicago
Wagner, Moller William	L	32	Princeton
Wagner, Percy Evan	L	32	Chicago
Wagner, Ralph Russell	CerE		Pontiac
Wagner, William Andrew	CE	36	Champaign
Wahl, Leo Jacob	EE		Sterling
Wainwright, James Butler	ME	35	Winchester
Walcott, Nona	LA sp	15½	Urbana

Walduck, Charles Louis	<i>Cer</i>	120	Chicago
Walker, Edna Wells	<i>LA</i>		Chicago
Walker, George William	<i>Agr</i>	5	Mackinaw
Walker, James Lynd	<i>LA</i>		Moline
Walker, Jennie Grace	<i>SS</i>	8	Cicero
Walker, John S	<i>A</i>	35	Aurora
Walker, Walter	<i>L</i>		Chicago
Walkerly, Dorothy Keziah	<i>HSLA (SS)</i>	8	Champaign
Walkerly, Victoria Pamilla	<i>HSLA (SS)</i>	68	Champaign
Wallace, Edgar Dearborne	<i>BLA</i>		Chicago
Wallace, Edward	<i>CE</i>	108	Chicago
Wallace, Lewis Bryant	<i>LA</i>		Homer
Wallace, Mabel Clare	<i>HSAgr</i>	92	LaGrange
Wallace, Wellington James Hamilton	<i>A</i>	105	Monticello, Mo.
Wallace, Stanley Tiffin	<i>MnE</i>	44	Paris
Waller, Richard Valentine	<i>EE</i>	1½	Elkhart, Ind.
Walraven, Wesley Burnham	<i>EE</i>		Centralia
Walser, Frank Emil	<i>Agr sp</i>		Brooklyn, N. Y.
Walters, Harvey Henry	<i>A</i>	59	Beach, N. D.
Walters, Jesse Noble	<i>Agr</i>	77	Carlisle, Ind.
Walters, Prentice Therman	<i>LA</i>	6½	Macomb
Walton, James Kelley	<i>Agr (SS)</i>	22	Anna
Walworth, Edward Harvey	<i>Agr</i>	125½	Urbana
Wang, Te Chang	<i>Agr</i>		Soochow, China
Wansbrough, John Edgar	<i>L</i>	9	Peoria
Ward, Amy	<i>HSLA</i>	33	El Paso
Ward, Francis Hugh	<i>ChE</i>		Rockford
Ward, Mamie Lawrence	<i>LA</i>	34	Chicago
Ward, Madge Virginia	<i>LA</i>	59	Chicago
Ward, Philip Henry	<i>L</i>	88	Sterling
Warfield, Vernon Huff	<i>BLA</i>	65	Urbana
Warinner, Charles Willis	<i>ME</i>	76	Urbana
Warmolts, Lambertus, Jr.	<i>CE</i>	21	Oregon
Warnock, Maude May	<i>LA sp</i>	6	Urbana
Warren, Arthur Richard	<i>BLA</i>	23	Belvidere
Warren, Frank Baker	<i>CE</i>	75	Paw Paw
Warren, Henry Russell	<i>Agr</i>	43	Belvidere
Waters, Enos	<i>Agr</i>	67	Detroit, Mich.
Waters, Orley Morton	<i>SS</i>		Belle Rive
Watkins, Ralph Smalley	<i>ME</i>		Sheldon
Watson, Altha Jane	<i>HSLA</i>		Topeka, Kan..
Watson, Chauncey Brown	<i>Agr</i>	123½	De Kalb
Watson, Grover W	<i>L</i>	28	Farmer City
Watson, Jane Coulson	<i>LA</i>	37	Champaign
Watson, John Wesley	<i>Agr</i>		De Kalb
Watson, Lelia Elta	<i>HSLA</i>		Champaign
Watson, Mrs. Margaret Elizabeth	<i>SS</i>	3	Champaign
Watson, Perley Melvin	<i>SS</i>	8	Champaign
Watson, Warner Allison	<i>Agr</i>		Macomb
Watson, William Sumner	<i>EE</i>	102½	Ottawa
Watts, Claude Harrison	<i>BLA</i>	97	Sauemin
Watts, Ethel Frances	<i>Mus</i>	17	Champaign
Watts, George Raymond	<i>EE</i>	9	Lawrenceville
Watts, George William	<i>ME</i>	36	Chicago
Way, Mildred Ruth	<i>LA</i>	102	Mazeppa, Minn.
Webb, Alonzo C, Jr.	<i>A</i>	32	Nashville, Tenn.
Webb, Rayburn Stokes	<i>A</i>	78½	E. St. Louis
Webber, Harry Edwin	<i>AE</i>	37	Chicago
Webber, Harry Turnell	<i>Cer</i>		Danville
Webber, Helen Waller	<i>LA</i>	34	Urbana
Webber, Margaret	<i>LA</i>	57	Danville
Weber, Gertrude T	<i>S</i>		Olney
Webster, Henry Clayton	<i>CE</i>	66	Urbana
Wehrman, Carl Olin	<i>BLA</i>	33½	Chatham
Wehrman, Meta	<i>Mus sp</i>		Ogden
Weillepp, Eva Sarah	<i>HSLA</i>	41	Decatur

Weinberg, Flora Jane	HSAgr		Rushville
Weiner, Joseph	SS	8	Bunker Hill
Weingartner, Clyde Frederick	AE	36	Rockford
Weis, Herman William	S	95	Holyoke, Mass.
Weisfeld, Leo Harold	A	139	Chicago
Weitz, Henry John Conrad	Agr sp	24½	Morris
Welch, John Maurice	ChE	70	La Salle
Wilkins, Raymond Harvey	Agr	90½	Champaign
Wellman, Orpha May, A.B., 1911	SS		Champaign
Wells, Edward Roy	CE	75	Geneva
Wells, Fred Sheaff	ME	39	Aurora
Wells, Olive L.	SS	7½	Winchester
Welsh, Marjorie Cecilia	HSLA	31	Bradford
Welsh, Roger Thomas	Agr	33	Rockford
Welton, Floy Evelyn	SS	4	Marion
Welty, Wallace Moorhead	Agr	63	Chicago
deWerff, Emil Christian	Agr sp		Farina
de Werff, Henry August	Agr sp(SS)	105	Farina
Wessels, Vera Gretchen	LA		Quincy
West, Harrison	EE	79	Pecksbury, Ind.
Wescott, Clifford Harper	CE	75	Maywood
Westlund, Emil Hjlmer	BLA		Chicago
Weydell, Arthur Theodore	ME	98	Chicago
Whaite, Charles Miner	EE	108	Hoopeston
Wham, Benjamin	LA	35	Cartter
Wheeler, Bryant Long	Agr	24	Carrollton
Wheeler, Irene Burchard	HSLA	100	Laurens, Iowa
Wheeler, Lyman Gage	CE	108	Carrollton
Wheeler, Mildred Emeline	SS	9	Stonington
Wheeler, Russell Claire	ME (SS)	36	Champaign
Wheeler, William Erastas, Jr.	LA	33	E. St. Louis
Wheelhouse, Mary Elizabeth	LA		Decatur
Wheelock, Loyal Bergen	AE		Chicago
Whelan, James Marion, Jr.	CE	108	Chicago Heights
Whipple, Warner Frank	Agr	33	Utica
Whisler, Wayne Ely	BLA	23	Savanna
Whitchurch, Helen Margaret	HSAgr		Salem
White, Bertha Esther	SS	15½	Barry
White, Calvin William	BLA	101	Champaign
White, Frank Herbert, Jr.	EE	3	Chicago
White, Frank Leon	ME	97	Galva
White, George Richard	CE		Buffalo, N. Y.
White, Graybiel Graham	Cer	104	Chicago
White, James Gordon	CE	102	Chicago
White, John Wilson	L	69	Salem
White, Mary Louise	LA	97	Chrisman
White, Thomas Kenneth	EE	37	New York City
Whitelaw, James Chalmers Cameron	CerE	41	Chicago
Whiteside, Roy Allen	L sp		Moline
Whitford, Leverett George	Agr	51½	Edwardsville
Whitnel, Joe	LA		E. St. Louis
Whitney, Charles Earl	CE (SS)	87	Washington, D. C.
Whitney, Elizabeth Ann	SS	25½	Urbana
Whitney, Helen Woodrow	LA	101	La Grange
Whitney, Lewis Husted	Agr sp		Evanston
Whittaker, Malinda	LA	63	Cortland
Whittenberg, Daniel Wayne	Agr sp		Vienna
Whittenberg, Sarah Jane	LA (SS)	77½	Tunnel Hill
Wicoff, John Philip	SS	22	Greenup
Wieber, Anton Henry	EE	75	Quincy
Wiedeman, David, Jr.	BLA		Harvey
Wiersema, Harry Anthony	AE	116	Berwyn
Wiesenmeyer, Henry Riecks	BLA	35	Springfield
Wightman, Richard Mars	CE	42	St. Louis, Mo.
Wikoff, Minna Luella	HSLA	88	Chicago
Wilber, Harold Courtney	BLA		Potomac

Wilbourn, Asa J	L	15	Olive Branch
Wiley, James Elmo	Agr	100	Colfax
Wiley, Robert Ernest	ME		Warren
Wiley, Sarah Jana	HSAgr		Colfax
Wilford, Edward James	Agr		Aurora
Wilford, Robert Nicholas	Agr		Aurora
Wilkins, Raymond Harvey	Agr	90½	Champaign
Wilkins, Stanley Charles	Agr		Chicago
Wilkinson, Elon Gilbert	BLA	47	Geneseo
Wilkinson, Helen, A.B. (Univ. Cin- cinnati) 1909	Lb	3	Cincinnati, Ohio
Willard, Hazel Gertrude	LA	4	Urbana
Willard, Maude Harriett	S	89½	Belvidere
Willcox, Herbert Arthur	A	46	Kastota, Minn.
Wille, Laura May	HSLA (SS)	31	Enid, Okla.
Willerton, Fay	LA (SS)	97½	Farmer City
Williams, Alfred LeRoy	Agr	115½	Ft. Pitt, Saskatchewan
Williams, Charles Nicholas	A sp		Peoria
Williams, Earl Clinton	EE	74	Gardner
Williams, Frank Lunsford	LA		St. Louis, Mo.
Williams, Fenton Hamilton	LA		Watseka
Williams, Genevieve	S		Sidell
Williams, Harry Chadbourne	S		Augusta, Wis.
Williams, Howard Ivan	EE		Rockford
Williams, Leo A	Agr		DuQuoin
Williams, Lulu Hazel	LA	102	Sidell
Williams, Mary Edith, A.B., 1904, A.M., 1906	Mus sp		Urbana
Williams, Roy Campell	CE	109	Chicago
Williamson, Belle	LA	94	Palacios, Tex.
Williamson, John Caswell	LA		Sullivan
Williamson, Myra Marie	LA	31	Tuscola
Williford, Edward Allan	EE	37	Nokomis
Williford, Louis Albert	LA		Nokomis
Willis, Roy Barnes	Agr	68	Mt. Carmel
Willits, Ward Maurice	BLA		Harvey
Willson, Glen Irwin	EE	72	Guernsey, Wyo.
Wilson, Albert Edward	SS	9	Wasco
Wilson, Alfred David	Agr		McNabb
Wilson, Ashbel Ray	ME	32	Hutsonville
Wilson, Bernice Celia	HSAgr	65	Los Angeles, Calif.
Wilson, Helen May	LA		Chicago
Wilson, Horace Smith, A.B., 1912	REE	157	Chicago
Wilson, James Aiken	RME (SS)	76	Herrin
Wilson, Norman Kenneth	CE	75	Chicago
Wilson, Nelle Ruth	LA	49	Sparta
Wilson, William Webb	Agr sp	70	Brownstown
Windle, Clifford Cover	Agr sp		Mt. Morris
Winquist, Samuel Victor	BLA	67	Batavia
Wintermeyer, Elsa	S	113	Chicago
Winters, Charles Prior	LA	33	Chicago
Wisner, Samuel Eugene	Cer		Hot Springs, Ark.
Witchell, Barton Edward	EE	37	Vermont
With, George Orlando	MSE	35½	Joliet
Wittenberg, George Hyde	A	75	Little Rock, Ark.
Wittich, Fred Peter	EE (SS)	113	St. Louis, Mo.
Woelbeling, William Kenneth	EE	6	Chicago
Wolcott, Ward Shanks	ME	20	Conover, Ohio
Wold, Charles Abraham	CE	108	Littleton, Colo.
Woleben, Dean Parkhurst	CE	87	Chicago Heights
Wolf, Herman Carl	EE	108	Edwardsville
Wolf, Joseph Hanna	Agr		Danville, Ky.
Wolfe, Jacob	L	42	Lafayette, Ind.
Wolfe, Viola Esther	LA	33	Urbana
Wolfe, William Sidney	AE	124	Urbana
Wolff, Clarence Jacob	BLA	68	Springfield
Womacks, Mabel Clara	LA	66	Champaign

Wong, Wing Foee	BLA (SS)	97½	Hong Kong, China
Woo, Tsing Too	EE (SS)	133½	Saichow, China
Woo, Wai Shun	Agr	115	Shanghai, China
Wood, Adeline	HSAgr		Sullivan
Wood, Daniel Charles	EE	108	Pekin
Wood, Harry Gardner	EE	75	Jacksonville
Wood, Harry Thomas	LA	65	Hennepin
Wood, Otis LeRoy	Cer	88	Carthage
Woodcock, Helen Ernestine	HSAgr		Ogden, Utah
Woodroffe, Louise Marie	LA		Champaign
Woodruff, Arthur Eugene	SS	13½	Champaign
Woods, Ardie Geraldine	LA	109½	Macomb
Woods, George Edward	LA	99	Paris
Woodward, Edwin Mortimer	A		Odin
Woodridge, Fay Morse	EE	108	Gifford
Woolley, James Carson	EE		Carlinville
Woolman, Rachel Margaret	HSAgr	4	Urbana
Woolman, Richardine	LA (SS)	8	Urbana
Woolston, William Henry	Md	122	Geneva
Wooters, James Ellsworth, Ph.B., (Blackburn Coll.) 1908	Agr sp	20½	Odin
Wooters, Leland Magness	BLA	62	Champaign
Wooters, Norman Ellsworth	Agr		Champaign
Worrell, Joseph Lloyd	Agr	123	Bowen
Worrell, Mabel Fern	LA	94	Bowen
Wray, Charles William	Agr		Rockford
Wright, Allan Thurman	LA (SS)	94½	Franklin
Wright, Bernice	LA	67	Brocton
Wright, Burrell	L	29	Freeport
Wright, Douglas, Jr.	Agr	34	Decatur
Wright, Edward Paul	CE		Brocton
Wright, Joseph Franklin	BLA		Champaign
Wright, Joseph William	CerE		Chicago
Wright, Melvin James	S		Urbana
Wright, Minnie Roberta	LA	63	Urbana
Wright, Samuel Anthony	LA	100	Rome, Ga.
Wright, Wayne Ellsworth	Agr		Garden Prairie
Wright, William Joshua, Jr.	Ch		Dongola
Wrisley, George Alfred	BLA		Chicago
Wu, Chi Kao	S (SS)	144½	Shanghai, China
Wu, Pond Sheppon	SS		Canton, China
Wu, Wei Yoh	ME		Hunan, China
Wyant, Carl Stanley	A	76	Waterloo, Iowa
Wyatt, Frank Archibald, B.S., (Agrl Coll. Utah) 1910	SS	45½	Logan, Utah
Wycoff, Benjamin Harrison	Agr	70½	Laura
Wycoff, Delia	HSAgr	28	Laura
Wykle, Bertha Alice	LA	69	Mahomet
Wykle, Ethel Marie	HSAgr	21	Mahomet
Wyland, Ray Orion	LA		Ringwood, Okla.
Wylie, Arthur Johnson	Agr	28½	Utica
Wyman, Wallace	A	107	Mansfield
Yarwood, Stuart Kenneth	AE	28½	Elgin
Yates, Anne Corinne	LA		Vincennes, Ind.
Yen, Chia Cheow	S	100	Foo Chow, China
Yim, Daniel Jow	ME		Canton, China
Young, Arthur Edwin	Agr		Eugene, Oregon
Young, Edgar Berkley	Agr sp		Newman
Young, Everett Gillham	RME	116	Denver, Colo.
Young, John Law	Agr		Canton, China
Young, Yung Yen	Agr (SS)	142	Nanzhang, China
Younglove, Clyde Charles	AE	72	Sioux City, Ia.
Zahn, Fred Raymond	MSE	70	Belle River
Zee, Jeshime Zohn	EE (SS)	75	Shanghai, China
Zeis, Henry Charles	LA (SS)	90	Waterloo
Zelle, Carl Alfred	Ch		Lake Fork

Zeller, Simon S	LA	15	Brazil, Ind.
Zeppenfeld, Eugene William	Agr	67	St. Louis, Mo.
Zeter, Harry Moyer	Agr	31½	Lincoln
Zetterholm, Maurice Emil	L	26	Galesburg
Zimmerman, Anthony Urban	ME (SS)	41	Peoria
Zimmerman, Arthur Charles	A	18	Peru
Zimmerman, Robert Paul	LA (SS)	99½	Chilton, Texas
Zinser, Robert Bruce	BLA		Washington
Zipf, Oscar Robert, Jr.	Agr		Freeport
Zippodt, Roy Richard	AE	36	Urbana
Zollinger, James Edward	EE	36	Alliance, Neb.
Zook, Jacob Bloom	EE (SS)	73½	La Grange

## SCHOOL OF PHARMACY

NAME	COURSE*	RESIDENCE
Anderson, Adolph Emil (Ph.G., 1911)	PC sp	Moline
Anderson, Albert Franklin	P 1	St. Johns, Ariz.
Arnold, Grover Cleveland	P 2	Astoria
Baggaley, William	P sp	Chicago
Baird, Frank, Jr.	P sp	Harvard
Bate, Harry Duddly	P 1	Chicago
Bautz, Walter	P sp	Chicago
Becker, Edna	P 1	Davenport, Ia.
Beckert, LeRoy	P sp	Chicago
Blahnik, Emil Albert	P 1	Chicago
Boehm, Frederick Evenson	P 1	Neenah, Wis.
Borrelli, Dominick	P sp	Chicago
Borucki, Edward Anthony Felix	P 2	Chicago
Bosch, August Christopher	P 1	Gratiot, Wis.
Brekke, Marshall Theodore	P 1	Rice Lake, Wis.
Broom, Lewis Harris	P sp	Effingham
Brown, Lester Elbert	P sp	Pontiac
Bryant, Floyd Wiley	P 1	Elizabeth
Brykowski, Frank	P sp	Cicero
Buckmann, George Edward	P 2	Chicago
Canham, George Ernest	P 1	Neponset
Chapman, Harold Potter	P 2	Chicago
Clodgio, Norman Timothy	P sp	Chicago
Clark, Francis Edward	P 2	Peoria
Cleveland, Harold Vincent	P 2	Grayslake
Converse, Lawrence	P 1	Chicago
Cook, Albert	P 2	Terre Haute, Ind.
Cooke, Lawson Jacob	P 2	Goodland, Ind.
Crawford, Abiram Lee	P 2	Genoa
Crow, Joseph Benjamin	P 1	Ashley
Cunningham, Thomas William	P 1	Chicago
Dahms, Arthur August	P sp	Chicago
Dancey, John Leonard	P sp	Malden
Davenport, Royal	P 2	Calvin
Davidson, George Edward	P 2	Chicago
DeKoker, Abraham	P 1	Chicago
Donahue, Edward Thomas	P 2	Chicago
Dulla, Joseph Peter	P sp	Chicago
Edgett, Paul Wright	PC 1	Earlville
Egan, Raymond	P sp	Chicago
Eicholtz, Guy Wilbur	P 2	Chicago
Ende, Walter Arthur	P 1	Chicago
Erickson, Arthur Henry	P sp	Chicago
Esmond, Wendell Rodgers	P 1	Maywood
Falder, Everett Lester	P 1	Chicago
Freedman, Paul	P 1	Chicago

\*Abbreviations: P, Pharmacy; PC, Pharmaceutical Chemistry; 1, first year; 2, second year; sp, special.

Friedl, William John	P 1	Chicago
Gabric, Philip	P sp	Chicago
Gambell, Karl Vine	P 2	Chicago
Garside, James William	P 1	Wyoming
Garrity, Jeremiah Gerald	P 1	Spring Valley
Gates, George Francis	P 1	Chicago
Glenn, Elmer Henry	P sp	Chicago
Goldstine, Harry	P sp	Chicago
Gordon, Samuel Michael	P sp	Chicago
Goltermann, Richard William	P 1	Forest Park
Gouwens, Peter	P 2	Chicago
Gragg, Alfred Campbell	P 2	Litchfield
Grund, Charles Hugo, Jr.	P sp	Chicago
Greenawalt, Percy Frank	P 1	Lanark
Gustafson, Melsor Eugene	P sp	Chicago
Hackler, George Roscoe	P 2	Pekin
Hanneman, Lucas Peter	P 2	Chicago
Hart, John McDonald	P sp	Chicago
Hecht, Emil	P 1	Chicago
Hedberg, Charles Hilding	P sp	Chicago
Heidbreder, Edgar Philip	PC 2	Quincy
Henry, Carl John	P 2	Aurora
Hildebrandt, Philip Ervin	P 1	Lake Mills, Wis.
Hirsh, David	P 1	Chicago
Holderread, George Warren	P 2	Litchfield
Hollinshead, Elwood Jay	P 1	Morrison
Hoy, Ralph Gilbert	PC 1	Monmouth
Huebner, Charles Lawrence	P sp	Chicago
Hulden, Clarence Andrew	P sp	Chicago
Huston, Herbert Spangler	P 1	Carthage
Hutton, Malcolm Lee	P 2	Elizabeth
Jaeger, Clayton Eugene	P sp	Chicago
Jindrich, George William	P 1	Chicago
Johannes, Walter Charles	P sp	Chicago
Johnson, Harry Ernest	P 1	Rockford
Jordan, Gill	P 1	Chicago
Kakacek, Joseph John	P 1	Chicago
Kaspar, William John	P 1	Chicago
Kaufman, Isadore	P sp	Chicago
Knox, John McConnell	P 1	Rensselaer, Ind.
Kost, William Rush	P 2	Astoria
Kowalski, Joseph Wengel	P sp	Chicago
Kraemer, George Charles	P 2	Chicago
Krohn, Fred Earl	P 1	Roseville
Lavieri, Genario Dominic	PC 1	Chicago
Lee, William Alexander	P 2	Chicago
Lesko, Charles James	P 1	Chicago
Levy, Leon Frank	P sp	Ottawa
Lewman, Everet Andrew, B.S. (Purdue University, 1902)	P 2	Montezuma, Ind.
Logan, Albert Wellington	P 2	LaGrange
Lollar, Errett Hale	P 2	Newton
Long, George Archibald	P 2	Rensselaer, Ind.
Luckiesh, Edward	P 2	Maquoketa, Ia.
Lukasek, Alfred Michael	P 2	Chicago
McBride, George William	P 1	Paw Paw
McNeill, Roy	P 2	Herrin
Mancusi, John Benjamin	P 1	Chicago
Mendelsohn, Paul Israel	P 1	Chicago
Merschatt, Raymond Bartholomew	P sp	Chicago
Merschatt, Richard William	P 1	Chicago
Metcoff, Eli	P 2	Chicago
Meyrick, George Joseph	P 1	Chicago
Michalak, Casimir Anthony	P 1	Chicago
Miller, Thomas	P 1	Chicago
Miller, David Lyman	P 1	Carmi



Murphy, James Stanislaus	P 2	Nokomis
Myerson, Abraham	P 1	Chicago
Newberry, George Morris	P 1	Rock Island
Niesen, Charles James	P 1	LaSalle
Oetzel, Joe Karnes	P 1	Danville
Orr, Charles Clearance	P 1	Chicago
Pankau, Francis Alfred	P 2	Chicago
Pearce, Irving Fitch	P 1	Chicago
Polin, Rose	P 1	Chicago
Porter, Houston	P 2	St. Louis, Mo.
Prendergast, Richard Joseph	P 2	Chicago
Prims, George	P sp	Chicago
Rackaway, Alva Walter	P 2	Mt. Vernon
Radomski, Leon Roman	P 2	Chicago
Rueckert, Elmer Edward	P 1	Lake Mills, Wis.
Sadilek, William	P sp	Chicago
Schabloske, Charles Leo	P sp	Chicago
Schmid, Harold	P 1	Chicago
Schreiner, Albert, Jr.	PC 1	Batavia
Schultz, Alfred Edward	P sp	Waterman
Schultz, Charles John	P 2	Chicago
Schulz, Walter Carl	P 2	Chicago
Seuring, Carl Albert	P sp	Chicago
Shaw, Albert Jay	P 1	Miller, So. Dak.
Shwetz, Michael	P 1	Chicago
Skillman, Herbert Irving	P 1	Wyoming, Ohio
Sladky, George Joseph	P 1	Hawthorne
Snyder, Forrest Omo	PC 2	Chicago
Stables, Harry Fleming	P 2	Bethany
Stech, Frank James	P sp	Chicago
Stodden, Karl	P sp	Lyons, Ia.
Stoebig, Louis Elmer	P 2	Chicago
Stryzek, Edward Joseph	P 1	Chicago
Stulik, George	P 2	Chicago
Subert, Frank James	P sp	Chicago
Sullivan, William Clark	P 2	Flanagan
Tanner, James Clifton	P 1	Louisville
Taylor, Harry Arthur	P sp	Antioch
Thompson, Ralph Harold	P 1	Earlville
Todd, Harold Andrew	P 1	Grand Junction, Colo.
Tomamichel, Robert Peter	P sp	Quincy
Trippett, Sidney Bradley	P sp	Texarkana, Ark.
Unger, Paul	P sp	Chicago
Vann, James Silas	PC 2	Chicago
Van Nugteren, Frank William	P 2	Chicago
Vaupell, George Frederick	PC 1	Chicago
Vavra, Clio	P 1	Chicago
Vondrasek, Frank Joseph	P 1	Chicago
Wach, Charles Edward	P 2	Chicago
Waldo, Reginald Heber	P 2	Grand Junction, Colo.
Walsh, Thomas George	P sp	Chicago
Walter, George Fred	P 2	Chicago
Walther, Reuben William	P 2	Chicago
Warczak, John Stanley	P sp	Chicago
Warzynski, Ladislaus Joseph	P 1	Chicago
Weaver, Joe Hastings	P 2	Oregon
Weber, Peter Jacob Francis	PC 1	Chicago
Whittington, Omar Rosewell	P 2	Waldron, Ark.
Whitley, Walker Edward	P 1	Waterford, Wis.
Wiles, Clarence Edward	P sp	Kankakee
Wilhelm, William Floyd, Ph.G. (Valparaiso University, 1907)	P sp	Carbondale
Wixsom, Lee Almond	P 2	Chicago
Woltersdorf, Oscar	P 2	Chicago
Zarobsky, Otto Frank	P 2	Chicago
Zeman, Albert William	P sp	Chicago

# DEGREES CONFERRED

1912

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## THE UNDERGRADUATE COLLEGES

DEGREES OF BACHELOR OF ARTS, BACHELOR OF SCIENCE, AND BACHELOR OF MUSIC

*Conferred June 12, 1912*

- ALFRED NOYES ABBOTT, (as of the class of 1885), Bachelor of Science (Agriculture)  
ARTHUR WILLIAM ABBOTT, Bachelor of Science (Agriculture)  
M D ABNEY, Bachelor of Arts (Science\*)  
HERBERT AUGUSTUS ACER, Bachelor of Arts (Literature and Arts)  
RHODA GILMOUR ADRIANCE, Bachelor of Arts (Literature and Arts)  
WALTER WILFORD AINSWORTH, Bachelor of Arts (Literature and Arts)  
ARTHUR JOSEPH ALBRECHT, Bachelor of Arts (Literature and Arts)  
HAZEL ELLEN ALKIRE, Bachelor of Arts (Literature and Arts)  
EDWARD DEWALT ALLEN, Bachelor of Arts (Science)  
RALPH ALLEN, JR., Bachelor of Science (Agriculture)  
ORR ALLYN, Bachelor of Science (Agriculture)  
GUY VERNON ANDERSON, Bachelor of Science (Agriculture)  
LEO MAHLON APGAR, Bachelor of Science (Electrical Engineering)  
GROVER SAMUEL ARBUCKLE, Bachelor of Science (Mechanical Engineering)  
LOUISE CHRISTABEL ARMSTRONG, Bachelor of Arts (Literature and Arts)  
PEARL WINIFRED ASHTON, Bachelor of Arts (Science)  
CHARLES WILLIAM ATTEBERRY, Bachelor of Arts (Agriculture)  
BEULAH WINIFRED BACH, Bachelor of Arts (Literature and Arts)  
GLEN DAVID BAGLEY, Bachelor of Science (Electrical Engineering)  
OSCAR ROLAND BAINES, Bachelor of Arts (Literature and Arts)  
LAURA MINERVA BAKER, Bachelor of Arts (Literature and Arts)  
ERNEST ROBERT BALDWIN, Bachelor of Science (Agriculture)  
MAMIE ANNA BALDWIN, Bachelor of Arts (Literature and Arts)  
GENEVA MAE BANE, Bachelor of Science (Agriculture)  
JULIET LITA BANE, Bachelor of Science (Agriculture)  
ORLEY GLEN BARRETT, Bachelor of Science (Agriculture)  
MARY CORDELIA BARRY, Bachelor of Arts (Literature and Arts)  
CYRUS WHITE BASSETT, Bachelor of Science (Railway Electrical Engineering)  
STACY COLLINS BATES, Bachelor of Arts (Science)  
FRANKLIN WILLIAM BAUER, Bachelor of Arts (Literature and Arts)  
ARTHUR EDWARD BAUM, Bachelor of Arts (Literature and Arts)  
THEODORE ANDREW BAUMANN, Bachelor of Arts (Science)  
CHARLES WESLEY BEALL, Bachelor of Arts (Literature and Arts)  
KENNETH BEBB, Bachelor of Science (Agriculture)  
MABEL FLORENCE BEBB, Bachelor of Arts (Literature and Arts)  
OLIVE RUTH BECKINGTON, Bachelor of Arts (Literature and Arts)  
CYRENIUS BEERS, JR., Bachelor of Science (Agriculture)  
BENJAMIN RUDOLPH BELSLEY, Bachelor of Arts (Science)  
JEFFERSON HALL BELT, Bachelor of Science (Electrical Engineering)

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\*With thesis.

CHARLES HENRY BELTING, Bachelor of Science (Agriculture)  
 PAUL EVERETT BELTING, Bachelor of Arts (Literature and Arts\*)  
 CLARENCE SUMMERVILLE BENNETT, Bachelor of Arts (Literature and Arts)  
 SIMON ADDISON BENNETT, Bachelor of Arts (Literature and Arts)  
 WALTER CHARLES BERKEMEYER, Bachelor of Science (Architectural Engineering)  
 ALICE BIESTER, Bachelor of Arts (Science)  
 ROBERT OVERTON BLACK, Bachelor of Arts (Literature and Arts)  
 EVA LENA BLAIR, Bachelor of Science (Agriculture)  
 EDWARD BROW BLAISDELL, Bachelor of Arts (Science)  
 ELMER ROYAL BLOCK, Bachelor of Arts (Literature and Arts)  
 AUGUSTA ELEANOR BOND, Bachelor of Arts (Literature and Arts)  
 GRACE MAY BOOKWALTER, Bachelor of Arts (Literature and Arts\*)  
 RALPH WALKER BOOZE, Bachelor of Science (Railway Electrical Engineering)  
 LESTER EDWARD BOWERS, Bachelor of Arts (Science)  
 LANG, FULTON BOWMAN, Bachelor of Arts (Science)  
 EUGENE PATRICK BRADLEY, Bachelor of Science (Mechanical Engineering)  
 EUGENIA BRADLEY, Bachelor of Arts (Literature and Arts)  
 CHARLES WILLIAM BREMNER, Bachelor of Science (Civil Engineering)  
 ROBERTA MARGARET BROWN, Bachelor of Arts (Science)  
 LEWIS ALLEN BRUBAKER, Bachelor of Science (Architecture)  
 OSCAR ERNEST BULKELEY, Bachelor of Science (Civil Engineering)  
 ARTHUR ERNEST BURWASH, Bachelor of Science (Agriculture)  
 HOWARD MONREAU BUTTERS, Bachelor of Science (Mechanical Engineering)  
 DONALD ERSKINE BUYERS, Bachelor of Science (Mechanical Engineering)  
 CHARLES EDWIN CALDWELL, JR., Bachelor of Arts (Science)  
 MORTON RUSSELL CARLSON, Bachelor of Science (Agriculture)  
 JOSE ORIOLE CARREIRO, Bachelor of Science (Chemical Engineering)  
 ROY RUDY CARTER, Bachelor of Science (Civil Engineering)  
 FLORA MARGARET CASE, Bachelor of Arts (Literature and Arts)  
 HAROLD CLAYTON M CASE, Bachelor of Science (Agriculture)  
 HAROLD SMITH CASH, Bachelor of Science (Agriculture)  
 ELIZABETH HENRIETTA CASS, Bachelor of Arts (Literature and Arts)  
 SHERMAN CASS, Bachelor of Arts (Literature and Arts)  
 LUCIUS ORVILLE CHAMBERLAIN, Bachelor of Science (Railway Civil Engineering)  
 VUN-DIN CHINZUN CHANG, Bachelor of Science (Agriculture)  
 DENNISON WILLIAMS CHAPMAN, Bachelor of Science (Civil Engineering)  
 ARTHUR MELTON CHAVOUS, Bachelor of Science (Electrical Engineering)  
 HERBERT LOVEWELL CHENEY, Bachelor of Science (Architecture)  
 ALTA FERNE CHIPPS, Bachelor of Arts (Literature and Arts)  
 WILLIAM GLADSTONE CLARK, Bachelor of Science (Agriculture)  
 ROBERT HAYMOND CLARKE, Bachelor of Science (Railway Electrical Engineering)  
 JOEL SIMMONS COFFEY, Bachelor of Science (Agriculture)  
 JOHN ROBERT COLVILLE, Bachelor of Science (Electrical Engineering)  
 CARL COLVIN, Bachelor of Science (Agriculture)  
 VALENTIN CONFESOR, Bachelor of Science (Electrical Engineering)  
 ARTHUR FOSTER CONNARD, Bachelor of Science (Mechanical Engineering)  
 EDWIN LEWIS CONNELL, Bachelor of Science (Electrical Engineering)  
 DELMAR GROSS COOKE, Bachelor of Arts (Literature and Arts)  
 LEON JOSEPH CORBEY, Bachelor of Science (Architecture)  
 JAMES HENRY COULTER, Bachelor of Science (Civil Engineering)  
 LUVERN HENRIETTA CRAWFORD, Bachelor of Arts (Literature and Arts)  
 WILLIAM LESLIE CROW, Bachelor of Arts (Literature and Arts)  
 LOUIS EDWIN DALLENBACH, Bachelor of Arts (Science)  
 JOHN WALKER DAVIS, Bachelor of Science (Civil Engineering)

\*With thesis.

FRANK CLIFFORD DEAN, Bachelor of Arts (Literature and Arts)  
 ARTHUR DECHMAN, Bachelor of Science (Chemical Engineering)  
 EVA AMES DEDRICK, Bachelor of Arts (Literature and Arts)  
 CHARLES EDMUND DE LEUW, Bachelor of Science (Civil Engineering)  
 IRVING POLHEMUS DEMOTT, Bachelor of Arts (Literature and Arts)  
 HERBERT GLENN DERRY, Bachelor of Science (Electrical Engineering)  
 JOHN JOSEPH DESMOND, Bachelor of Science (Electrical Engineering)  
 FRED ROBERT DEWEND, Bachelor of Science (Architectural Engineering)  
 WILLIAM HOVEY DEWEY, Bachelor of Arts (Literature and Arts)  
 ROBERT WILLIAM DICKENSON, Bachelor of Science (Agriculture)  
 HARRY ALLAN DOANE, Bachelor of Science (Electrical Engineering)  
 OTIS BOND DORSEY, Bachelor of Science (Electrical Engineering)  
 THOMAS DUNN, Bachelor of Arts (Literature and Arts)  
 PHILIP R DUNTON, Bachelor of Science (Mechanical Engineering)  
 ELAIR DILWORTH DUVAL, Bachelor of Science (Railway Civil Engineering)  
 MELVILLE JOSEPH EAMES, Bachelor of Arts (Science)  
 CLARA MARY ECKHARDT, Bachelor of Arts (Literature and Arts\*)  
 LOUISE MABELLE EISZNER, Bachelor of Arts (Literature and Arts)  
 PHILIP RAYMOND ELFSTROM, Bachelor of Science (Civil Engineering)  
 CHARLES JOHN ELLIOTT, Bachelor of Science (Agriculture)  
 ORLAND I ELLIS, Bachelor of Science (Agriculture)  
 EDITH MAE ELMENDORF, Bachelor of Arts (Science)  
 JOHN LEWIS ERNST, Bachelor of Science (Architectural Engineering)  
 NELLIE TANNER ERSKINE, Bachelor of Arts (Literature and Arts)  
 ARTHUR THOMPSON EVANS, Bachelor of Arts (Science\*)  
 JOHN EDWARD EVANS, Bachelor of Science (Mechanical Engineering)  
 WILLIAM HOWARD FARNUM, Bachelor of Science (Architectural Engineering)  
 ALVIN ISAAC FARR, Bachelor of Arts (Literature and Arts)  
 PER ALEXANDER FAUST, Bachelor of Science (Mechanical Engineering)  
 LOUIS EUGENE FAYART, Bachelor of Arts (Literature and Arts)  
 HARRY FEDDE, Bachelor of Science (Electrical Engineering)  
 CLARENCE WILLIAM FICK, Bachelor of Science (Electrical Engineering)  
 JAMES STUART FINDLEY, Bachelor of Science (Civil Engineering)  
 HAMILTON RODELL FISHBACK, Bachelor of Arts (Science)  
 LAURA ESTELLE FISHER, Bachelor of Arts (Literature and Arts)  
 LEWIS NEBINGER FISHER, Bachelor of Science (Civil Engineering)  
 HARRISON OBIAH FLATT, Bachelor of Arts (Literature and Arts)  
 GEORGIA ELIZABETH FLEMING, Bachelor of Science (Agriculture)  
 GERTRUDE WALLACE FLEMING, Bachelor of Arts (Literature and Arts)  
 JOHN GOODFELLOW FLEMING, Bachelor of Science (Agriculture)  
 HERBERT EDWARD FOSTER, Bachelor of Science (Architectural Engineering)  
 VIOLA CONSTANCIA FRASER, Bachelor of Arts (Science)  
 PAUL BUCHER FRITCHEY, Bachelor of Arts (Literature and Arts)  
 IRENE MASON FUNK, Bachelor of Arts (Literature and Arts)  
 RALPH JOHN GARBER, Bachelor of Science (Agriculture)  
 DANIEL WEBSTER GASKILL, Bachelor of Arts (Science)  
 RALPH PILLSBURY GATES, Bachelor of Science (Chemistry)  
 ROSA-LEE GAUT, Bachelor of Music\*  
 AMELIA LOUISE GAY, Bachelor of Arts (Literature and Arts)  
 HARRY FOREST GEIST, Bachelor of Science (Electrical Engineering)  
 WILLIAM SUMNER GENTRY, JR., Bachelor of Science (Architectural Engineering)  
 IVALOO GENUNG, Bachelor of Science (Agriculture)  
 BEN GEST, A.B. (*Augustana College*) 1903, Bachelor of Science (Architectural Engineering)

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\*With thesis.

ARTHUR SOLOMAN GIDDINGS, Bachelor of Science (Electrical Engineering)  
 PAUL HARNED GILLAN, Bachelor of Science (Architectural Engineering)  
 DELBERT GEORGE GIRTON, Bachelor of Arts (Literature and Arts\*)  
 HARRY FRANKLIN GLAIR, Bachelor of Science (Mechanical Engineering)  
 GRACE GLASGOW, Bachelor of Science (Agriculture)  
 RUTH GLASGOW, Bachelor of Science (Agriculture)  
 LEONARD WOOD GLOVER, Bachelor of Arts (Literature and Arts)  
 GALEN VAN RENSSELAER GLOYD, Bachelor of Science (Agriculture)  
 PEARL HAZELETTE GOBEN, Bachelor of Science (Agriculture)  
 JULIUS LUDWIG GOEBEL, Bachelor of Arts (Literature and Arts)  
 LOUISE KATHRYN GOEBEL, Bachelor of Arts (Literature and Arts\*)  
 FRANK ELLWOOD GOODING, Bachelor of Science (Mechanical Engineering)  
 BYNE FRANCES GOODMAN, Bachelor of Arts (Literature and Arts\*)  
 CHARLES GORDON, Bachelor of Science (Railway Electrical Engineering)  
 FRED GUYON GORDON, Bachelor of Science (Municipal and Sanitary Engineering)  
 WILLIS GAYLORD GORDON, Bachelor of Science (Electrical Engineering)  
 JOHN EUBANKS GOSSETT, Bachelor of Arts (Literature and Arts\*)  
 LOUIS HILL GOURLEY, Bachelor of Arts (Literature and Arts\*)  
 FLORENCE HARRIETT GRABBE, Bachelor of Science (Agriculture)  
 CHARLES WARREN GRAINGER, Bachelor of Science (Civil Engineering)  
 LESTER HERBERT GRAVES, Bachelor of Science (Electrical Engineering)  
 JOSEPH PEACOCK GREEN, Bachelor of Science (Agriculture)  
 JONSDALE GREEN, JR., Bachelor of Science (Mechanical Engineering)  
 SAMUEL ELZA GREGG, Bachelor of Science (Mechanical Engineering)  
 DONALD KAREL GROVES, Bachelor of Arts (Literature and Arts)  
 EVANGELINE EUNICE GROVES, Bachelor of Arts (Literature and Arts)  
 PERCY WILCOX GUMAER, Bachelor of Arts (Literature and Arts), Bachelor of Science (Electrical Engineering)  
 CHARLES LEROY GUSTAFSON, Bachelor of Science (Architecture)  
 MARY ANNA HAAN, Bachelor of Arts (Literature and Arts\*)  
 VALENTINE BERNARD HABRYLWICZ, Bachelor of Science (Electrical Engineering)  
 THOMAS LLOYD HAINES, JR., Bachelor of Arts (Literature and Arts)  
 HOMER HALL, Bachelor of Arts (Literature and Arts\*)  
 AMY IRWIN HAMPTON, Bachelor of Music\*  
 ALFRED CHESTER HANFORD, Bachelor of Arts (Literature and Arts)  
 JOHN PAUL HANNA, Bachelor of Science (Science)  
 PHILIP SIDNEY HANNA, Bachelor of Arts (Literature and Arts\*)  
 VIGGO HANSEN, Bachelor of Science (Civil Engineering)  
 CLAUDE LEROY HANSON, Bachelor of Science (Civil Engineering)  
 JOSEPHINE ALICE HAPPER, Bachelor of Arts (Science)  
 GEORGE A HARNACK, Bachelor of Science (Civil Engineering)  
 BERNICE HARRISON, Bachelor of Arts (Literature and Arts)  
 HAZEL CHARLOTTE HART, Bachelor of Arts (Literature and Arts)  
 SUSAN ALICE HASH, Bachelor of Arts (Literature and Arts)  
 EGBERT JOSHUA HASSELQUIST, Bachelor of Science (Mechanical Engineering)  
 ELIZABETH MARY HATCH, Bachelor of Arts (Literature and Arts)  
 KOICHI HATTORI, Bachelor of Science (Civil Engineering)  
 CLARENCE IRWIN HAVEN, Bachelor of Science (Municipal and Sanitary Engineering)  
 WILLIAM HAWKES, Bachelor of Arts (Science)  
 JOHN BALDWIN HAWLEY, Bachelor of Science (Architecture)  
 DON LLEWELYN HAYS, Bachelor of Science (Electrical Engineering)  
 HARRY NORMAN HAYS, Bachelor of Science (Agriculture)  
 LLOYD LANNES HELM, Bachelor of Arts (Literature and Arts)

\*With thesis.

- HENRY BENJAMIN HENLEY, Bachelor of Arts (Science)  
 ROBERT MORROW HENLEY, Bachelor of Arts (Science)  
 OTHO MANSON HENN, Bachelor of Arts (Literature and Arts)  
 HAROLD HARVEY HERBERT, Bachelor of Arts (Literature and Arts)  
 BESSIE EDNA HERSMAN, Bachelor of Arts (Literature and Arts)  
 CHARLES KAY HEWES, Bachelor of Science (Chemical Engineering)  
 JAMES HERBERT HEWITT, A.B. (*McKendree College*) 1908, Bachelor of Science (Civil Engineering)  
 GEORGE EDWARD HINCHLIFF, Bachelor of Arts (Science)  
 CLYDE MONROE HOBART, Bachelor of Arts (Literature and Arts)  
 ATHERTON WELLS HOBLER, Bachelor of Arts (Literature and Arts)  
 EDMUND GOTTLIEB HOEPPNER, Bachelor of Science (Architectural Engineering)  
 CHARLES ELMER HOLLEY, Bachelor of Arts (Literature and Arts\*)  
 EDWARD EMIL HOLLMANN, Bachelor of Science (Chemistry)  
 NELLIE NANCY HORNOR, Bachelor of Arts (Science)  
 CARRIE ELSIE HOSKINS, Bachelor of Science (Agriculture)  
 EDNA HOSKINS, Bachelor of Science (Agriculture)  
 ROSS BARBER HOSTETTER, Bachelor of Science (Agriculture)  
 BESSIE BUSEY HOULT, Bachelor of Arts (Literature and Arts)  
 CHIH HSU, Bachelor of Science (Civil Engineering)  
 JOSEPH EARL HUBER, Bachelor of Science (Civil Engineering)  
 ROBERT R HUDELSON, Bachelor of Science (Agriculture)  
 FREDERICK DAVIS HULL, Bachelor of Science (Electrical Engineering)  
 HOMER BOYS HULL, Bachelor of Science (Agriculture)  
 ROSS DARWIN INGALLS, Bachelor of Science (Electrical Engineering)  
 HAROLD BENNETT INGERSOLL, Bachelor of Arts (Science)  
 WILLIAM VERITY INGRAM, Bachelor of Science (Architectural Engineering)  
 ARTHUR LYLE ISRAEL, Bachelor of Science (Chemical Engineering)  
 EVA JANE JACKSON, Bachelor of Arts (Literature and Arts)  
 HARRY FRANCIS JAHN, Bachelor of Science (Municipal and Sanitary Engineering)  
 LOUISE MAY JENNER, Bachelor of Science (Agriculture)  
 ROY ERNEST JEWETT, Bachelor of Science (Electrical Engineering)  
 GENJIRO JINGUJI, Bachelor of Science (Electrical Engineering)  
 PAUL EVANGEL JOHNSTON, Bachelor of Science (Chemical Engineering)  
 ROBERT TAYLOR JONES, Bachelor of Science (Architecture)  
 FRANK SPENCER KAILER, Bachelor of Science (Electrical Engineering)  
 DONALD JACKSON KAYS, Bachelor of Science (Agriculture)  
 CHARLES NELSON KELL, Bachelor of Science (Mechanical Engineering)  
 ARTHUR CARYL KELLEY, Bachelor of Arts (Literature and Arts\*)  
 GEORGE BROPHY KENDALL, Bachelor of Science (Agriculture)  
 CHARLES MARSHALL KENNAN, Bachelor of Arts (Literature and Arts)  
 WILLIAM RIDDLE KENT, Bachelor of Arts (Science)  
 ALFRED HENRY KERNDT, Bachelor of Science (Mechanical Engineering)  
 PAUL KIRCHER, A.B., 1911, Bachelor of Science (Civil Engineering)  
 JOSEPHINE KIRK, Bachelor of Arts (Literature and Arts)  
 FRANCES KIRKWOOD, Bachelor of Arts (Literature and Arts)  
 CLARENCE ABEL KLOOSTER, Bachelor of Science (Architectural Engineering)  
 HARRY JOHN KLOTZ, Bachelor of Science (Mechanical Engineering)  
 GUY JINK KOONS, Bachelor of Arts (Literature and Arts)  
 HERMAN CHARLES KRANNERT, Bachelor of Science (Mechanical Engineering)  
 ELWIN VALENTINE KRATZ, Bachelor of Science (Architectural Engineering)  
 EMMA AUGUSTA KRAUSE, Bachelor of Arts (Literature and Arts\*)  
 GEORGE DRIVER LAING, Bachelor of Science (Agriculture)

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\*With thesis.

CHARLES AUGUSTUS LAMB, Bachelor of Arts (Literature and Arts)  
 NELLIE BLY LAMB, Bachelor of Arts (Literature and Arts)  
 ALBERT FABRIAN LANDSEA, Bachelor of Science (Electrical Engineering)  
 HERBERT THAL LEO, Bachelor of Science (Chemistry)  
 FRANK BONNER LEONARD, Bachelor of Arts (Literature and Arts\*)  
 RUTH LEONARD, Bachelor of Arts (Literature and Arts)  
 EDNA LEWIS, Bachelor of Arts (Literature and Arts)  
 FRED DICKERSON LEWIS, Bachelor of Science (Agriculture)  
 KATHERINE LEWIS, Bachelor of Arts (Literature and Arts)  
 RALPH RICE LEWIS, Bachelor of Arts (Science)  
 RUTH MARIE REBECCA LINDBERG, Bachelor of Arts (Literature and Arts)  
 LULU LEAH LITTLEJOHN, Bachelor of Arts (Literature and Arts)  
 ANANIAS CHARLES LITTLETON, Bachelor of Arts (Literature and Arts)  
 LIONEL LYMAN LIVINGSTONE, Bachelor of Science (Civil Engineering)  
 WILLIAM CECILE LORENZEN, Bachelor of Science (Municipal and Sanitary Engineering)  
 CAROLINE LUTHER, Bachelor of Arts (Literature and Arts)  
 NELLIE IRENE McCLURG, Bachelor of Arts (Literature and Arts)  
 ANDREW HENRY McCONNELL, Bachelor of Arts (Literature and Arts)  
 WALLACE ROBERT McCONNELL, Bachelor of Arts (Science)  
 DWIGHT WESLEY MCCOY, Bachelor of Arts (Literature and Arts)  
 RUDOLPH McDERMET, Bachelor of Science (Electrical Engineering)  
 EUGENE HARRIS MCFARLAND, Bachelor of Science (Architecture)  
 ELIZABETH ROBERTS MCGILL, Bachelor of Arts (Literature and Arts)  
 FRANCIS XAVIER MCGRATH, Bachelor of Arts (Literature and Arts)  
 HALBERT P MacGREGOR, Bachelor of Science (Chemical Engineering)  
 LIESETTE JANE MCHARRY, Bachelor of Arts (Literature and Arts)  
 WILLIAM RAPHAEL MCINTIRE, Bachelor of Science (Civil Engineering)  
 PAUL HARMON MCKEE, Bachelor of Arts (Literature and Arts)  
 RAY CLARK McLARTY, Bachelor of Arts (Literature and Arts)  
 FORREST C McNARY, Bachelor of Science (Civil Engineering)  
 JOHN JOSEPH McQUAID, Bachelor of Arts (Literature and Arts)  
 ITSU MAKI, Bachelor of Arts (Literature and Arts\*)  
 ELIAS MANDEL, Bachelor of Science (Chemistry)  
 ALFRED EDGERTON MANIERRE, A.B. (*Yale University*) 1902, Bachelor of Science (Architecture)  
 WELSH WALKER MANSPEAKER, Bachelor of Science (Civil Engineering)  
 HARRY ELLIS MARQUETTE, Bachelor of Science (Railway Mechanical Engineering)  
 SIDNEY GRISWOLD MARTIN, Bachelor of Science (Civil Engineering)  
 CHARLES WILLARD MATTHEWS, Bachelor of Science (Civil Engineering)  
 VICTOR ALVIN MATHIS, Bachelor of Science (Railway Mechanical Engineering)  
 LEIGH MERYL MATTHEWS, Bachelor of Science (Mechanical Engineering)  
 CHARLOTTE MAE MATTOON, Bachelor of Arts (Literature and Arts)  
 EARL NELS MATTSON, Bachelor of Science (Mechanical Engineering)  
 DAVID BLAIR MAVER, Bachelor of Science (Civil Engineering)  
 CARL ELMER MERRIS, Bachelor of Science (Electrical Engineering)  
 WILLIAM MEYER, Bachelor of Science (Science)  
 PAUL KEITER MILES, Bachelor of Science (Mechanical Engineering)  
 MABEL LUCILE MILLER, Bachelor of Arts (Literature and Arts)  
 MARIE MAUD MILLER, Bachelor of Arts (Literature and Arts)  
 MILO KIRK MILLER, Bachelor of Arts (Science)  
 SAMUEL LESLIE MILLER, Bachelor of Science (Municipal and Sanitary Engineering)

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\*With thesis.

JOHN EDSON MILLIZEN, Bachelor of Arts (Literature and Arts)  
GUY G MILLS, Bachelor of Science (Civil Engineering)  
MARY ETHEL MINER, Bachelor of Science (Agriculture)  
EVA MITCHELL, Bachelor of Arts (Literature and Arts)  
JUAN PORTUONDO Y MIYARES, Bachelor of Science (Civil Engineering)  
FLOYD WILLIAM MOHLMAN, Bachelor of Science (Chemistry)  
JULIUS JOHN MOJONNIER, Bachelor of Science (Chemistry)  
HARRY EDGAR MONTGOMERY, Bachelor of Science (Electrical Engineering)  
MAX ALFRED MONTGOMERY, Bachelor of Science (Architecture)  
JAMES RALPH MONTIGEL, Bachelor of Science (Architectural Engineering)  
FREDERICK LINDLEY MORGAN, Bachelor of Science (Architecture)  
GUY LYMAN MORRILL, Bachelor of Science (Mechanical Engineering)  
ROGER LEROY MORRISON, A.B., 1911, Bachelor of Science (Railway Civil Engineering)  
MARGARET MOSCHEL, Bachelor of Arts (Literature and Arts)  
LEO ELWOOD MOSER, Bachelor of Science (Electrical Engineering)  
CLEDA VIRGINIA MOSES, Bachelor of Arts (Literature and Arts)  
NELLIE IRENE MOURNING, Bachelor of Arts (Literature and Arts)  
CIRILO JOSEPH MULLEN, Bachelor of Arts (Literature and Arts)  
NORRIS FAY MURRAY, Bachelor of Science (Electrical Engineering)  
HOWARD DIMICK MYERS, Bachelor of Science (Civil Engineering)  
HENRY NAFZIGER, Bachelor of Science (Electrical Engineering)  
CHARLES SOL NARKINSKY, Bachelor of Science (Electrical Engineering)  
ROBERT HAROLD NAU, Bachelor of Science (Civil Engineering)  
JOSEPH RAYMOND NAY, Bachelor of Science (Architectural Engineering)  
CARRIE ISABEL NEEDHAM, Bachelor of Arts (Literature and Arts)  
IRIS NELSON, Bachelor of Arts (Science)  
JOSEPH COLBY NELSON, Bachelor of Science (Architecture)  
RAYMOND ANDREW NELSON, Bachelor of Science (Agriculture)  
JOSEPH ALLAN NEVINS, Bachelor of Arts (Literature and Arts\*)  
CHARLES IVAN NEWLIN, Bachelor of Science (Agriculture)  
FRANCIS STANLEY NICKI, Bachelor of Science (Mechanical Engineering)  
WILLIAM NIEHAUS, Bachelor of Science (Civil Engineering)  
LOUISE MINNIE NIERSTHEIMER, Bachelor of Arts (Literature and Arts)  
LILLIAN GENEVIEVE NOTH, Bachelor of Arts (Literature and Arts)  
FRED MELVIN NOURSE, Bachelor of Science (Electrical Engineering)  
CHAUNCEY BRISTOL OLIVER, Bachelor of Science (Mechanical Engineering)  
FLORENCE ARMINA OLSON, Bachelor of Arts (Literature and Arts\*)  
HAROLD ANTHONY OTIS, Bachelor of Science (Electrical Engineering)  
AMY MARIE OVERLAND, Bachelor of Arts (Literature and Arts)  
CYRUS EDMUND PALMER, Bachelor of Science (Architectural Engineering)  
MATTHEW SIMPSON PARKHURST, Bachelor of Science (Agriculture)  
HARRY McLAUCHLAN PARSONS, Bachelor of Science (Agriculture)  
ANNA LORINE PECK, Bachelor of Arts (Literature and Arts)  
BENJAMIN SALISBURY PFEIFFER, Bachelor of Science (Mechanical Engineering)  
GEORGE WEST PHILLEO, Bachelor of Science (Mechanical Engineering)  
JOHN BREEN PHILLIPS, Bachelor of Arts (Science)  
LESTER LEROY PHILLIPS, Bachelor of Science (Electrical Engineering)  
HARRY POKOWSKI, Bachelor of Science (Civil Engineering)  
WILMA EDITH PONDER, Bachelor of Arts (Literature and Arts)  
HATTIE MILDRED POOR, Bachelor of Arts (Literature and Arts)  
LEWIS LAWRENCE POWELL, Bachelor of Science (Civil Engineering)  
LUELLA FLORENCE POWERS, Bachelor of Arts (Literature and Arts)  
SAMUEL RALPH POWERS, Bachelor of Arts (Science)

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\*With thesis.



DAVID CHANDLER PRINCE, Bachelor of Science (Electrical Engineering)  
 CHARLES ALEXANDER PURCELL, Bachelor of Science (Agriculture)  
 ROBERT JOHN QUINN, Bachelor of Science (Chemical Engineering)  
 ISIDOR RAFFIN, Bachelor of Science (Architectural Engineering)  
 GEORGE ERWIN RAMEY, Bachelor of Science (Architecture)  
 GEORGE AUDAS RANSON, Bachelor of Science (Mechanical Engineering)  
 CHARLES RASCHER, Bachelor of Science (Chemical Engineering)  
 SIDNEY CLEN RATHFON, Bachelor of Science (Architectural Engineering)  
 FRED DELONG REXWINKLE, Bachelor of Science (Electrical Engineering)  
 EDWARD MELVILLE RHODES, LL.B., 1900, Bachelor of Science (Agriculture)  
 NELLE MELISSA RIETZ, Bachelor of Arts (Science\*)  
 CHESTER CORWIN ROBERTS, Bachelor of Arts (Literature and Arts)  
 ANNA BELLE ROBINSON, Bachelor of Arts (Literature and Arts)  
 GRACE MAY ROBINSON, Bachelor of Arts (Literature and Arts)  
 PAUL THOMAS ROBINSON, Bachelor of Science (Agriculture)  
 THOMAS LEO ROBINSON, Bachelor of Science (Mechanical Engineering)  
 WALTER ROMAN, JR., Bachelor of Arts (Literature and Arts)  
 PEARL IOLA ROPP, Bachelor of Arts (Literature and Arts)  
 ERNEST JEROME ROSSBACH, Bachelor of Science (Mining Engineering)  
 FLOYD ELZA RUSHER, Bachelor of Science (Agriculture)  
 LEWIS MELVIN RUSSELL, Bachelor of Arts (Literature and Arts)  
 GRACE ANNE RUST, Bachelor of Arts (Science)  
 REUBEN LAWRENCE SANDBERG, Bachelor of Science (Civil Engineering)  
 HARRY OGDEN SAUNDERS, Bachelor of Science (Electrical Engineering)  
 THEODORE JAMES SCHANCE, Bachelor of Science (Mechanical Engineering)  
 CHESTER SCHENCK, Bachelor of Science (Electrical Engineering)  
 FREDERICK JOHN SCHLINK, Bachelor of Science (Mechanical Engineering)  
 ALEXANDER LOUIS SCHOLZ, Bachelor of Science (Civil Engineering)  
 LEO VINCENT SCHUNDNER, Bachelor of Science (Electrical Engineering)  
 TENJES HENRY SCHUTTE, Bachelor of Arts (Literature and Arts)  
 OTTO JULIUS SCHWARTZ, Bachelor of Science (Agriculture)  
 ERICH WILHELM SCHWARTZE, Bachelor of Arts (Science)  
 ROBERT ST. CLARE SEESE, Bachelor of Science (Electrical Engineering)  
 JOHN FRANCIS SEIFRIED, Bachelor of Science (Civil Engineering)  
 OTTO ERWIN SEILER, Bachelor of Arts (Literature and Arts)  
 JOHN ARMSTRONG SELLARDS, Bachelor of Arts (Literature and Arts)  
 ISIDOR MAX SHAPIRO, Bachelor of Arts (Literature and Arts)  
 CECIL JAMES SHAPLAND, Bachelor of Science (Civil Engineering)  
 JOHN SHEAY, Bachelor of Science (Agriculture)  
 VINAYAK YESHAWANT SHEWADE, Bachelor of Science (Chemical Engineering)  
 WILLIAM ANDREW SHIRK, Bachelor of Arts (Literature and Arts)  
 NELLIE MARIE SIGNOR, Bachelor of Arts (Literature and Arts)  
 JOHN WILHELM SIMMONS, JR., Bachelor of Science (Civil Engineering)  
 PAUL CHARLES SIMONINI, Bachelor of Science (Mechanical Engineering)  
 ALEXANDER McDUGAL SIMONS, Bachelor of Science (Electrical Engineering)  
 CHARLES LEROY SIMONS, Bachelor of Science (Agriculture)  
 GEORGE AUGUSTINE SIMONS, Bachelor of Arts (Literature and Arts)  
 COLIN CAMPBELL SIMPSON, Bachelor of Arts (Science)  
 CLARA SINCLAIR, Bachelor of Arts (Literature and Arts)  
 VICTOR ROBERT SLADEK, Bachelor of Science (Architectural Engineering)  
 WILLIS DANIEL SLONNEGER, Bachelor of Arts (Literature and Arts)  
 CLOYD CLAYTON SMITH, Bachelor of Science (Electrical Engineering)  
 ALDEN EUGENE SNYDER, Bachelor of Science (Agriculture)  
 RAFAEL ARCANGEL SOTO, Bachelor of Science (Mechanical Engineering)

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\*With thesis.

CHARLES HERBERT SPAULDING, Bachelor of Science (Chemical Engineering)  
AUBREY DAYTON SPENCE, Bachelor of Arts (Science)  
JOHN MCCLURE SPONSLER, Bachelor of Science (Mechanical Engineering)  
OTTO SPRINGE, Bachelor of Science (Ceramics Engineering\*)  
AMBROSE CARL STAHL, Bachelor of Science (Mechanical Engineering)  
AMANDA EMMA STAPEL, Bachelor of Arts (Literature and Arts)  
CARL STEPHENS, Bachelor of Arts (Literature and Arts)  
DANA HUGH STEVENSON, Bachelor of Science (Agriculture)  
JAMES VAIL STEVENSON, Bachelor of Arts (Science)  
GLENNVILLE EDWARD STEWART, Bachelor of Science (Electrical Engineering)  
IRA BROKAW STIEFEL, Bachelor of Science (Electrical Engineering)  
CLARENCE MILLER STITZEL, Bachelor of Science (Agriculture)  
LAWRENCE ORVILLE STOCKER, Bachelor of Science (Architectural Engineering)  
JOHN WILLIAM STOKES, Bachelor of Science (Electrical Engineering)  
EDNA LOUISE STONE, Bachelor of Arts (Literature and Arts)  
GLADYS LEE STRAIGHT, Bachelor of Arts (Literature and Arts)  
BERTHA HENRIETTA STRAUCH, Bachelor of Arts (Literature and Arts)  
EDWARD B STYLES, Bachelor of Science (Civil Engineering)  
CHARLES MICHAEL SULLIVAN, Bachelor of Science (Electrical Engineering)  
JOHN BRUCE SUTHERLAND, JR., Bachelor of Science (Architectural Engineering)  
HORACE CONRAD SWANNELL, Bachelor of Science (Electrical Engineering)  
FRED EARL SWEITZER, Bachelor of Science (Agriculture)  
THOMAS AUGUSTUS SYMONS, Bachelor of Science (Agriculture)  
MILDRED VIRGINIA TALBOT, Bachelor of Arts (Literature and Arts)  
FLORENCE MAE TANNER, Bachelor of Arts (Literature and Arts)  
WILLIAM LINCOLN TAYLOR, Bachelor of Arts (Science)  
ALICE CARY THAYER, Bachelor of Arts (Literature and Arts)  
RAYMOND ROGERS THOMAS, Bachelor of Arts (Literature and Arts)  
JOHN PAUL THOME, Bachelor of Science (Agriculture)  
CHRISTIAN BERNARD THVEDT, Bachelor of Science (Electrical Engineering)  
JOHN VICTOR TINEN, Bachelor of Science (Chemistry)  
JOHN NELSON TODD, Bachelor of Science (Mechanical Engineering)  
LOUIS ARTHUR TOHILL, Bachelor of Arts (Literature and Arts)  
HUGH HARRISON TOLMAN, Bachelor of Arts (Literature and Arts)  
ORLA ALAMON TOWNS, Bachelor of Arts (Literature and Arts)  
MARGARET JANE TREAT, Bachelor of Arts (Literature and Arts)  
ERNEST DEWITT TURNER, Bachelor of Science (Agriculture)  
WALTER VANTURNER, Bachelor of Science (Mechanical Engineering)  
EDITH JOY VANCLEVE, Bachelor of Arts (Literature and Arts)  
EDWARD EVERETT VANCLEVE, Bachelor of Arts (Literature and Arts)  
LAURA LILLIAN VANCLEVE, Bachelor of Arts (Literature and Arts)  
ARNOLD CYRUS VANZANDT, Bachelor of Arts (Literature and Arts\*)  
ARCHIBALD BEEBE VANDEUSEN, Bachelor of Science (Electrical Engineering)  
HARRIE EARL VANDEVEER, Bachelor of Science (Electrical Engineering)  
CLAUDE VANGUNDY, Bachelor of Science (Electrical Engineering)  
ROY L VANIMAN, Bachelor of Science (Electrical Engineering)  
LYNN BRIAN VAUGHAN, Bachelor of Arts (Science)  
MINNIE VAUTRIN, Bachelor of Arts (Science)  
CHARLES EDWIN VEAR, Bachelor of Arts (Literature and Arts\*)  
JOSEPH MCNAUGHTON VIAL, Bachelor of Science (Agriculture)  
GREGORY VIGEANT, JR., Bachelor of Science (Architecture)  
ARCHIE LEWIS VOIGHT, Bachelor of Science (Mining Engineering)  
WALTER CHARLES VOSS, Bachelor of Science (Architectural Engineering)  
HARVEY FRANKLIN WAGNER, Bachelor of Science (Civil Engineering)

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\*With thesis.

HARMAN EBERT WAITS, Bachelor of Arts (Literature and Arts)  
 ANTHONY WILLIAM WAND, Bachelor of Science (Civil Engineering)  
 CHARLES HOWARD WARNOCK, Bachelor of Arts (Literature and Arts)  
 GEORGE EDWARD WARREN, Bachelor of Science (Civil Engineering)  
 EDWARD EVERETTE WATERS, Bachelor of Arts (Literature and Arts)  
 ALEXANDER WATMOUGH ERSKINE, Bachelor of Science (Civil Engineering)  
 WALTER HARRY WEBER, Bachelor of Arts (Literature and Arts)  
 MELVIN EICHBERG WEIL, Bachelor of Science (Electrical Engineering)  
 JOHN RICHARD WELLS, Bachelor of Science (Agriculture)  
 RALPH RAY WELLS, Bachelor of Science (Agriculture)  
 LAWRENCE MARTIN WENTER, Bachelor of Science (Mechanical Engineering)  
 CHARLES H WEST, (as of the class of 1884) Bachelor of Science (Civil Engineering)  
 JESSE RAYMOND WHEATON, Bachelor of Science (Architectural Engineering)  
 CLIFFORD E WHELOCK, Bachelor of Science (Agriculture)  
 RUTH LINCOLN WHITAKER, Bachelor of Arts (Literature and Arts)  
 COURTLAND KIRKE WHITE, Bachelor of Arts (Literature and Arts)  
 ASA J WILBOURN, Bachelor of Arts (Literature and Arts)  
 GEORGE GLENN WILEY, Bachelor of Science (Mechanical Engineering)  
 BEN J WILSON, Bachelor of Science (Civil Engineering)  
 FRANK HARLAND WILSON, Bachelor of Science (Electrical Engineering)  
 HORACE SMITH WILSON, Bachelor of Arts (Science)  
 EDWARD KITCHELL WITCHER, Bachelor of Arts (Literature and Arts)  
 WILLIAM PAXTON WITT, Bachelor of Science (Civil Engineering)  
 COLLETTE EVERMAN WOOLMAN, Bachelor of Science (Agriculture)  
 WALTER BOATMAN WORSHAM, Bachelor of Arts (Science\*)  
 ETHEL WEST WRIGHT, Bachelor of Arts (Literature and Arts)  
 GEORGE ELLERY WRIGHT, Bachelor of Science (Architecture)  
 JOHN EDWARD WRIGHT, Bachelor of Science (Electrical Engineering)  
 GEORGE JOHN ZIMMERMAN, Bachelor of Arts (Literature and Arts\*)  
 ADOLF EDWARD ZUCKER, Bachelor of Arts (Literature and Arts\*)  
 ROBERT GARDNER YOUNG, Bachelor of Science (Electrical Engineering)

# THE COLLEGE OF LAW

## DEGREE OF BACHELOR OF LAWS

*Conferred June 12, 1912*

DE WITT BILLMAN	HARRY EDWARD KERKER
EDWIN VAN METER CHAMPION	PAUL BLISS LAUHER
WILFRED MORAN DOHERTY	HERMAN MOHR
EDWARD LOUIS EAGLE	RALPH MONROE
CHESTER OWEN FISCHER	TIRRIE OSTIN PRATHER
WINFIELD CORWIN GILMORE	RAYMOND GEORGE REAL
LOGAN GLASGOW GRIFFITH	CHARLES SIMEON ROBERTS
ALBERT LEANDER HALL	LYNN CALLSEN SIEBERNS
DORRIS NELSON HITCH	PETER CHARLES WALTERS
HAROLD EVERETT HUBER	CHARLES PROVINE WEBB
HENRY JEROME INGRAM	CHARLES WHAM
THOMAS JEFFERSON KASTEL	LLOYD GARRISON WILLIAMS
ADNER FRED KENDALL	

## DEGREE OF DOCTOR OF LAW

JOHN LARIMER KAGY, A.B., 1909

\*With thesis.

## THE LIBRARY SCHOOL

DEGREE OF BACHELOR OF LIBRARY SCIENCE

*Conferred June 12, 1912*

CLARA MABLE BROOKS  
 WINIFRED FEHRENKAMP  
 EMMA FELSENTAL, Ph.B. (*University of Chicago*) 1910  
 AURELLA KNAPP, A.B. (*Illinois Wesleyan University*) 1909  
 MYRTLE ELIZABETH KNEPPER, A.B. (*Highland University*) 1907  
 MARGIE ETHOL LANGDON, A.B. (*Nebraska Wesleyan University*) 1907  
 FRANCES WILLARD MATHIS  
 MARY GERTRUDE MORTON, B.L. (*Ohio Wesleyan University*) 1905  
 CATHARINE SUSAN OAKS, A.B. (*William Smith College*) 1912  
 HONOR LOUISE PLUMMER, A.B. (*University of Colorado*) 1907  
 MYRTLE ANNA RENZ  
 EMILY ROBISON, A.B., (*Temple University*) 1909

## THE COLLEGE OF MEDICINE

DEGREE OF DOCTOR OF MEDICINE AND SURGERY

*Conferred June 4, 1912, in Chicago*

MABEL INDIA ADAMS	JOHN ADAM EBERT
E ALBERT AISENSTADT	JOHN ALDEN DEAN ENGESATHER
HARRY ALDES	ALEXANDER DONALD FERGUSON
ALBERT ALLEN	CLEMENT FISCHER
OLIVER EDMOND ALYEA	ROSCOE ROBY FISK
JEREMIAH FRANK ARMSTRONG, B.S.	ROBERT BENONI FLEEGER
ARON MAX BEILIN	ABRAHAM GEORGE FLEISCHMAN
ARTHUR LEWIS BEYERLEIN	HOWARD NORTON FLEXER
CHARLES PATTON BLAIR, A.M.	ABRAHAM ALBERT FREEDMAN
JULIUS BLOOM	HARRY JOSEPH FREEMMEL
EUGENE RADFORD BOYER	ALBERT EUGENE FUCHS
ROY FRED BREEDEN	ALAN EDWARD GAGE
EDWIN RUTHERFORD BUTTERFIELD	KATHARINE GEROW
MABEL ROSINA CARLSON	WILLIAM N GOONE
ARTHUR NARCISSE CHATEL	JOHN SIMPSON GORDON
BENJAMIN ZIEGFRIED CHANNON	HAROLD VOGT GOULD
GEORGE ABBOTT CHICKERING, B.S.	OTTO ISHMAEL GREEN, B.S.
EDWARD ALBERT CHRISTOFFERSON	MERRILL WORTH GRUBB
JAMES MATTHEW CONERTY	LOUIS MORRIS GRUNBERG
ASHER RAYMOND COTTRELL	HENRY VIRGIL HANSON
LAURA MURPHY COTTRELL	LYNDON DENNY HARRIS
WALTER WILLIAM CRESS	CLARA EDNA HAYES
FRED RAYMOND CROOKS	HENRY WALLACE HARTZELL
SELMA OLGA CZOLBE	GRACE LINE HOMMAN
DAVID DERONDA DELZELL	JOHN H HRABIK
CHARLES CHESTER DICKINSON	ROBERT HURKA
FRANK DICOSOLA	FRANK EMERSON INKS, A.B.
STEPHEN ALPHONSUS DONAHOE	JAMIE NICOLAS
WILLIAM EMMETT DONAHOE	BENSON MUNDY JEWELL
HARRY JOSEPH DWYER	CHARLES HARCOURT JOHNSON

MARIE JEANNETTE JONES  
 WALTER RAYMOND JONES, A.B.  
 PAUL VINCENT JOYCE  
 ARTHUR WILLIAM KARCH  
 HARRY KNOTT  
 ISIDOR EMIL KOHN  
 THEODORE KOLVOORD  
 SIGURD HERBERT KRAFT  
 LOUIS ROBERT KRATZENSTEIN  
 LOUIS FRANKLIN KUBELA  
 VIDDA SAMUEL LAURIN  
 JACK RALPH LAVIERI  
 WELCOME BARCOCK LEWIS, B.S.  
 EDMUND WILLIAM LITTLEFIELD  
 ROCCO VINCENZO LOBRAICO  
 GILBERT MARTIN LOEWE  
 RAY EVAN LOGAN  
 LYNN LUZERNE LORENS  
 JOHN HARRISON LYNN  
 HARRISON WILLIS MALTBY  
 WALKER ROSCOE MARKS  
 HARRY WATSON MARTIN  
 JOHN FRANKLIN MARTIN  
 JOSEPH INGRAM MERSHON  
 CARL MICHEL  
 CHARLES EDWARD JOHN MILLER  
 FREDERICK CHRISTOPHER MILLER  
 PAUL MORTON MILLER  
 HAROLD H MOORE  
 LUTHER REMI MOORE  
 RALPH DOLLAHAN MURPHY  
 CLARENCE JAMES McMULLEN  
 NAUM GEORGE NASIF  
 BARBARA MARIE NICKEY  
 OLIVER S OLSON  
 WALTER KNUTE OLSON  
 LEONARD JOSEPH OSTROWSKI  
 NEAL LAWRENCE O'HERRIN  
 JOHN GABRIEL O'MALLEY  
 RUBY HELEN PAINE  
 BERNARD BARNEY PARKER  
 RUTH AZNIV PARMALÉE, A.B.  
 JAMES FRANCIS PEATTIE

FREDERICK JAMES PORT  
 JAMES BERNARD RAUB  
 THOMAS HAROLD REAGAN  
 TORRENCE REED  
 ARTHUR CALVIN RHINE  
 BUDD ROBBINS  
 FREDERICK KING ROGERS  
 SAMUEL JOHN ROSS  
 DELTA EULILLA ROWLAND  
 HOBART CONWAY RUDDICK  
 RICHARD ROOT RUPERT  
 HERMAN LOUIS SARVELA  
 MARTIN PAVEL SASKO  
 WILLIAM CHRISTOPHER SCHIELE  
 CHESTER ORVILLE SHEPARD  
 FRANK EDMUND SHIPMAN, Ph.G.  
 IRENE SMEDLEY, A.B.  
 JAMES ROYAL SMITH  
 OLIVER RUFUS SPALDING  
 CHARLES JOHN STAUFFACHER, B.S.  
 EMIL JAMES STEIN  
 BENJAMIN GEORGE STEPHENSON  
 FRED EICHER STOKEY  
 LESLIE LEWIS STONE, Ph.G.  
 SAMUEL STUSSER  
 ROSS OREN TAYLOR  
 ALVIN THOMPSON  
 CLYDE ROGERS VAN GUNDY  
 WILLARD ROBERT VAUGHAN  
 CHARLES JOHN WAGNER, A.M.  
 THOMAS BURKE WALSH  
 ARTHUR EMIL AUGUST WANDERER  
 FRANK MONROE WELDY  
 ARTHUR WILLIAM WERMUTH  
 WARREN OVERTON WHEELOCK  
 SARAH MARGUERITE WHITE  
 CLARENCE HENRY WIENEKE  
 JOHN CLEMENT WILLIAMSON  
 CLYDE EARL WILSON  
 ROY HITCHON WILSON  
 FRANK CHARLES WINTERS  
 EZRA LLOYD WURTZER

# THE COLLEGE OF DENTISTRY

## DEGREE OF DOCTOR OF DENTAL SURGERY

*Conferred June 4, 1912, in Chicago*

ERIC ALLAN-MARTIN  
 MEHDY EDWARD ASGER  
 SPENCER PAUL ASHLEY  
 EVART BENJAMIN BERRY  
 GILBERT G BICKNELL  
 EDWARD HARRY BUSTA

ALBERT FREDERICK COLTMAN  
 FRANK S COMELLO  
 LEO N DANIELS  
 HERMAN SIDNEY DEUTSCH  
 EDWIN EVANSON  
 JOSEPH ANTHONY FLANNERY

IRVIN ULRICH FRIED  
 BERNARD D FRIEDMAN  
 S JOSEPH Z GANTZ  
 PHILIP H GOLDSTEIN  
 BERT CRAWFORD HIGGINS  
 SHINHICHI HARRY ITO  
 B ARNETT JORDAN  
 WILLIAM WALLACE McCRILLIS  
 EMMETT E McDERMOTT  
 HENRY JACOB MANN  
 ROBERT MARTIN  
 OSKAR PAUL MARTIN

ARTHUR CONROD MEYER  
 JOSEPH D PALESE  
 HANNAH ESHOO PATROUS  
 EDLA ALICE PORATH  
 SOLOMON H ROBERTS  
 ABRAHAM ROTH  
 AMANDE ANNA SHAY  
 CORRINE SLAMAN  
 CARROLL W STUART  
 CARL DAVID TAY  
 PETER JOSEPH TEELING  
 JOHN VAN DER VEN

### THE SCHOOL OF PHARMACY

#### DEGREE OF GRADUATE IN PHARMACY

*Conferred April 25, 1912, in Chicago*

JOHN ELON BIXBY  
 GROVER CLEVELAND BOND  
 LOUIS ARTHUR BOSSMAN  
 JOHN CARVELLI  
 JOHN AUGUST DORJAHN  
 ARTHUR THEODORE ENGLAND  
 (Class of 1910)  
 ANGELO MARIE FERRER  
 JAMES HOWARD FINNIGAN  
 JESSE HAROLD GALLAWAY  
 JACOB GOLDSTEIN  
 STEPHEN S GORNY  
 BENJAMIN CARL GROOSE  
 ROY WILLIAM HARRELL  
 MICHAEL GEORGE KASPRZYK  
 PAUL McCULLOCH KEPNER  
 (Class of 1911)  
 ARTHUR MILNE KIDD, JR.  
 FRANK W KREMER, JR.  
 (Class of 1910)  
 JOSEPH KRUPICKA

ORVAL WILKIE LEE  
 (Class of 1911)  
 FRANK HENRY LINDEMAN  
 CHESTER ARTHUR LOGAN  
 (Class of 1911)  
 ERNEST ELMER MONTGOMERY  
 (Class of 1911)  
 ADELBERT DALE NEIS  
 (Class of 1910)  
 ERNEST PRESTON OWEN  
 OSCAR W ROGERS  
 (Class of 1910)  
 THOMAS ROSE  
 (Class of 1911)  
 VIRGIL FREDERICK SIEBERT  
 WILLIAM JAMES STINSON  
 ROBERT HARVEY STOCKS  
 WALTER SWIECINSKI  
 JOHN LUDOVIC VALENTINO  
 JOSEPH A WARZYASKI  
 HAYDN HENRY WORLEY

#### DEGREE OF PHARMACEUTICAL CHEMIST

*Conferred June 9, 1912, in Chicago*

STANLEY C CLARKE  
 BEN LEE EICHER (Class of 1911)  
 HERBERT HENRY HEIDBREDE (Class of 1911)

### THE GRADUATE SCHOOL

#### DEGREES OF MASTER OF ARTS AND MASTER OF SCIENCE

*Conferred June 12, 1912*

IDA EMILY AKIN, A.B.  
 (Indiana University) 1908  
 Master of Arts (Botany)

ARVID R. BERT ANDERSON, B.S., 1911  
 Master of Science (Electrical Engineering)

CHARLES THOMAS ANDERSON, B.S., 1911  
 Master of Science (Electrical Engineering)

JESSIE EMMA BALDWIN, A.B., 1908  
 Master of Arts (Botany)

- PANZY LOUISE BARGER, B.S.  
(*Tarkio College*) 1911  
Master of Arts (Zoology)
- JESSIE MELANGLTHON BARNHART, B.S., 1906  
Master of Science (Chemistry)
- FLORENCE GABRILLE BAXTER, A.B., 1911  
Master of Arts (Mathematics)
- CLAUDIUS EDMUND BENNETT, B.S.  
(*University of Nebraska*) 1909  
Master of Science (Electrical Engineering)
- OLAF BERGEIM, B.S.  
(*South Dakota State College*) 1908  
Master of Science (Chemistry)
- CHARLES DAY BLACK, B.S., 1911  
Master of Science (Electrical Engineering)
- NORMAN ROBERT BLATHERWICK, B.S.  
(*Grinnell College*) 1909  
Master of Science (Chemistry)
- SIMEON JAMES BOLE, A.B.  
(*University of Michigan*) 1906  
Master of Arts (Education)
- JOHN HENRY BORNEMANN, B.S., 1910  
Master of Science (Chemistry)
- ROYDEN EARL BRAND, B.S., 1909  
Master of Science (Dairy Husbandry)
- ELIZABETH PARNHAM BRUSH, A.B.  
(*Smith College*) 1909  
Master of Arts (History)
- FRANK LESLIE CLAPP, B.S.  
(*Lincoln College*) 1911  
Master of Arts (Education)
- HARRY PEACH CORSON, B.S.  
(*New Hampshire College*) 1910  
Master of Science (Chemistry)
- FLORA ALICE DENBY, Ph.B.  
(*Blackburn College*) 1911  
Master of Arts (English)
- CHARLES ELMER DURST, B.S., 1909  
Master of Science (Horticulture)
- MATI LAL DUTT, B.S., 1911  
Master of Science (Electrical Engineering)
- WALTER ELMER EKBLAW, A.B., 1910  
Master of Arts (Geology)
- MANUEL CONRAD ELMER, B.S.  
(*Northwestern College*) 1911  
Master of Arts (Sociology)
- LAWRENCE TURNER FAIRHALL, B.S., 1911  
Master of Science (Chemistry)
- CHARLES FRANCIS FERRIS, B.S., 1911  
Master of Science (Agronomy)
- SARA ADELAIDE FLEMING, A.B.  
(*Greenville College*) 1907  
Master of Arts (German)
- CYRUS STOKES GENTRY, A.B.  
(*McKendree College*) 1911  
Master of Arts (Classics)
- GRACE GLASGOW, B.S., 1912  
Master of Science (Botany)
- RUTH GLASGOW, B.S., 1912  
Master of Science (Botany)
- FRED JAY GRAY, B.S., 1911  
Master of Science (Electrical Engineering)
- OWEN EUGENE GRIGSBY, B.S., 1911  
Master of Science (Electrical Engineering)
- AXEL FERDINAND GUSTAFSON, B.S., 1907  
Master of Science (Agronomy)
- HARRY FIELDING HADLEY, A.B.  
(*James Millikin University*) 1911  
Master of Arts (Chemistry)
- HAZEL HARDIN, A.B.  
(*DePauw University*) 1908  
Master of Arts (Classics)
- ELIZABETH MARY HATCH, A.B., 1912  
Master of Arts (Psychology)
- HARRY EWALD HEEREN, A.B.  
(*Shurtleff College*) 1911  
Master of Arts (Political Science)
- ADA VIOLA HOOVER, B.S.  
(*Carthage College*) 1911  
Master of Arts (Classics)
- JOSIE BATCHELLER HOUGHENS, A.B.  
(*Tulane University*) 1903; B.L.S., 1905  
Master of Arts (Sociology)
- DELTON THOMAS HOWARD, A.B.  
(*Lawrence College*) 1910  
Master of Arts (Philosophy)
- JAMES ORTON HUFF, A.B., 1911  
Master of Arts (English)
- LEONARD VAUGHAN JAMES, B.S., 1906  
Master of Science (Electrical Engineering)
- KATHERINE JENSEN, B.S.  
(*North Dakota Agricultural College*). 1904  
Master of Science (Household Science)
- LLOYD THEODORE JONES, A.B., A.M.  
(*Lake Forest College*) 1909, 1910  
Master of Science (Physics)
- FRANCES MARJORIE KILBURN, A.B.  
(*Rockford College*) 1911  
Master of Arts (English)
- HOWARD BAKER KINGSBURY, A.B., 1909  
Master of Arts (Mathematics)
- EDWARD AUGUST THEODORE KIRCHER, A.B., 1911  
Master of Arts (Mathematics)

- SHERMAN HENRY LITTLER, A.B., 1911  
Master of Arts (Education)
- JULIAN HERMAN LEWIS, A.B., 1911  
Master of Arts (Physiology)
- EDWARD ROY LUDWIG, B.S., 1911  
Master of Science (Architecture)
- JESSIE MCHARRY, A.B., 1911  
Master of Arts (History)
- ESTHER MASSEY, A.B., 1905  
Master of Arts (German)
- LOUIS CLARK MATHEWSON, A.B., A.M.  
(*Albion College*) 1910, 1911  
Master of Arts (Mathematics)
- FREDERICK EMERSON MERRILLS, A.B.  
(*Harvard University*) 1911  
Master of Arts (Political Science)
- FLOYD HAYS MILLARD, B.S.  
(*University of Colorado*) 1910  
Master of Science (Theoretical and Applied Mechanics)
- JOHN HARRIS MITCHELL, B.S., M.S.  
(*Alabama Polytechnic Institute*) 1903, 1904  
Master of Science (Chemistry)
- IRBY COGHILL NICHOLS, B.S., A.M.  
(*University of Mississippi*) 1906, 1908  
Master of Science (Mathematics)
- HUA CHING OU, A.B.  
(*Peiyang University*) 1906, B.S., 1911  
Master of Science (Agronomy)
- MELVERN D OVERMIER, B.S., 1911  
Master of Science (Electrical Engineering)
- JAY BOARDMAN PARK, A.B., 1908  
Master of Science (Agronomy)
- RAY BOYD PONDER, B.S., 1911  
Master of Science (Mechanical Engineering)
- JULIUS ADAM REINEMUND, A.B.  
(*Augustana College*) 1911  
Master of Arts (Sociology)
- MARY EMMA RENICK, A.B., 1911  
Master of Arts (Mathematics)
- CHARLES FREDERICK CURTIS RILEY, A.B.  
(*University of Michigan*) 1905  
Master of Science (Zoology)
- RAYMOND JEFFERSON ROARK, B.S., 1911  
Master of Science (Civil Engineering)
- THOMAS WALTER SAMUELS, A.B., 1909  
Master of Arts (Economics)
- WILHELMINA MARIE SCHAFER, A.B.  
(*Lake Forest College*) 1911  
Master of Arts (German)
- WILLIAM FRED SCHALLER, B.S., 1910  
Master of Science (Electrical Engineering)
- GEORGIA KELLAR SLOUGH, A.B.  
(*Hedding College*) 1908  
Master of Arts (Classics)
- PERCY ALMERIN SMITH, A.B., 1901  
Master of Arts (Education)
- WILLIAM HERSCHEL SMITH, B.S.  
(*University of Nebraska*) 1906  
Master of Science (Animal Husbandry)
- VERA JESSIE SNOOK, A.B., 1911  
Master of Arts (English)
- IRENE ELIZABETH STALEY, A.B.  
(*James Millikin University*) 1909  
Master of Arts (English)
- CHARLES LESLIE STEWART, A.B.  
(*Illinois Wesleyan University*) 1911  
Master of Arts (Economics)
- CHARLES JACOB STOWELL, B.S.  
(*Illinois Wesleyan University*) 1911  
Master of Arts (Economics)
- MILTON WINFIELD THOMPSON, A.B., 1910  
Master of Arts (Political Science)
- RALPH EARLE TIEJE, A.B., 1910  
Master of Arts (English)
- EDWARD EVERETT VANCLEVE, A.B., 1912  
Master of Arts (Education)
- HELEN GERTRUDE WATSON, A.B.  
(*Hedding College*) 1911  
Master of Arts (Classics)
- JONATHAN WINBORNE WHITE, B.S.  
(*Agricultural & Mechanical College of North Carolina*) 1903  
Master of Science (Agronomy)
- JOHN HAMILTON WHITTEN, A.B., 1911  
Master of Arts (Botany)
- ANNA WALLER WILLIAMS, A.B., 1907  
Master of Arts (Household Science)
- CHARLES RICHARD WILSON, A.B.  
(*Illinois College*) 1911  
Master of Arts (Mathematics)
- DAVID WRIGHT WILSON, B.S.  
(*Grinnell College*) 1910  
Master of Science (Chemistry)
- SEWALL GREEN WRIGHT, B.S.  
(*Lombard College*) 1911  
Master of Science (Zoology)
- TRYGVE D YENSEN, B.S., 1907  
Master of Science (Electrical Engineering)
- THEODORE FREDERICK ZUCKER  
(*Graduate Concordia College*) 1907  
Master of Science (Chemistry)



PROFESSIONAL DEGREES IN ENGINEERING

*Conferred June 12, 1912*

- CHARLES BAKER BURDICK, B.S., 1895; Civil Engineer  
 ALEXANDER DAWES DUBOIS, B.S., 1899; Electrical Engineer  
 GEORGE WALLACE HUBBARD, B.S., 1899; Mechanical Engineer  
 EDWARD SPENCER KEENE, B.S., 1890; Mechanical Engineer  
 CHARLES TRESCOTT RIPLEY, B.S., 1909; Mechanical Engineer  
 GUY HENRY RUMP, B.S., 1904; Civil Engineer  
 ALWIN LOUIS SCHALLER, B.S., 1907; Mechanical Engineer  
 WILLIS APPLEFORD SLATER, B.S., M.S., 1906, 1910; Civil Engineer

DEGREE OF DOCTOR OF PHILOSOPHY

*Conferred June 12, 1912*

- SAMUEL HERBERT ANDERSON, A.B., A.M. (*Park Coll.*) 1902, 1903 (Physics)  
*Thesis:* Ionization of Photo Electric Properties of Vapors of Alkali Metals  
 MARGARET LEWIS BAILEY, A.B. (*Cornell Univ.*) 1903; A.M., 1910 (German)  
*Thesis:* Milton and Jacob Böhme  
 STUART JEFFERY BATES, A.B., A.M. (*McMaster Univ.*) 1907, 1909 (Chemistry)  
*Thesis:* The Iodine Coulometer and the Value of the Faraday  
 CHARLES FRANCIS BRISCOE, A.B. (*Indiana Univ.*) 1899; A.M., 1904 (Botany)  
*Thesis:* Tubercle Bacilli in Nature  
 DAVID WILLIAM CORNELIUS, A.B. (*DePauw Univ.*) 1906 (Physics)  
*Thesis:* The Study of the Velocity of Electrons in the Photo-Electric Effect as a Function of the Wavelengths of the Light  
 WILLIAM WELLS DENTON, A.B. (*Univ. Michigan*) 1907; A.M., 1909 (Mathematics)  
*Thesis:* Projective Differential Geometry of Developable Surfaces  
 JAMES EVERETT EGAN, A.B. (*DePauw Univ.*) 1908; A.M., 1910 (Chemistry)  
*Thesis:* Observations on the Rare Earths. Yttrium Chloride and the Atomic Weight of Yttrium  
 HUGH BYRON GORDON, A.B. (*Miami Univ.*) 1908; A.M., 1910 (Chemistry)  
*Thesis:* A Differential Dynamic Method for the Accurate Determination of Relative Vapor-Pressure Lowering  
 WALTER EDWARD JOSEPH, B.S., (*Purdue Univ.*) 1907 (Animal Husbandry)  
*Thesis:* A Study of Protein as a Factor in the Nutrition of Swine with Special Reference to the Distribution of the Various Forms of Nitrogen in the Animal Body  
 JACOB GARRETT KEMP, A.B., A.M., 1906, 1910 (Physics)  
*Thesis:* Conditions of Sensibility of Photo-Electric Cells with Alkali Metals and Hydrogen  
 LEONIDAS ROSSER LITTLETON, A.B. (*Southern Univ.*) 1907; A.M. (*Tulane Univ.*) 1910 (Chemistry)  
*Thesis:* Molecular Rearrangements in the Camphor Series. Derivatives of Isocamphoric Acid; Isoaminolauronic Acid and Its Decomposition Products  
 PAUL FREDERICK REIFF, Ph.D. (*Basel*) 1901 (History)  
*Thesis:* Friedrich Gentz, an Opponent of the French Revolution and Napoleon  
 ELLISON LLOYD ROSS, B.S. (*Iowa State Coll.*) 1904 (Chemistry)  
*Thesis:* Phosphorus Metabolism of Lambs  
 FRANKLIN WILLIAM SCOTT, A.B., A.M., 1901, 1903 (English)  
*Thesis:* A Bibliography of the Newspapers and Periodicals of Illinois from 1814 to 1879

EARLE KENNETH STRACHAN, B.S., (*Worcester Poly. Inst.*) 1908; M.S., 1910  
(Chemistry)

*Thesis:* The Equilibrium Between Arenious Acid and Iodine in Aqueous Solution

MAURICE COLE TANQUARY, A.B., A.M., 1907, 1908 (Entomology)

*Thesis:* Biological and Embryological Studies on Formicidae

ARTHUR JERROLD TIEJE, A.B., A.M. (*Cornell Univ.*) 1903, 1904 (English)

*Thesis:* The Expressed Critical Theory of European Prose Fiction Before 1740 Exclusive of Problems of Characterization, Setting, and Style

VINCENT HOLLIS TODD, A.B. (*Harvard Univ.*) 1907; A.M., 1910 (German)

*Thesis:* Baron Christopher von Graffenried's Newbern Adventures

ALBERT LEMUEL WHITING, B.S. (*Massachusetts Agr'l Coll.*) 1908; M.S. (*Rhode Island State Coll.*) 1910 (Agronomy)

*Thesis:* A Biochemical Study of Nitrogen in Certain Legumes

RICHARD HERMAN WILLIAMS, B.S. (*Univ. Toronto*) 1905; M.S., 1907 (Animal Husbandry)

*Thesis:* A Study of Protein as a Factor in the Nutrition of Swine with Special Reference to the Distribution of the Forms of Ash and Phosphorus in the Animal Body

#### HONORARY DEGREES

*Conferred June 12, 1912*

THOMAS JONATHAN BURRILL, Ph.D., LL.D., *Doctor of Laws*

SAMUEL WALKER SHATTUCK, C.E., LL.D., *Doctor of Laws*

# FELLOWS AND SCHOLARS IN THE GRADUATE SCHOOL

---

1912-1913

JAMES EDWARD ACKERT, Fellow in Zoology  
FREDERICK HENRY ADLER, Fellow in German  
GLEN DAVID BAGLEY, Scholar in Electrical Engineering  
MARGARET LEWIS BAILEY, Traveling Fellow in German  
ALICE BIESTER, Scholar in Household Science (*Nominee of the College of Science*)  
ROBERT WESLEY BROWN, Scholar in Geology  
DANIEL MILTON BRUMFIEL, Scholar in Entomology  
JOSEPHINE ELIZABETH BURNS, Fellow in Mathematics  
FRED EMERSON CLARK, Scholar in Economics  
MARGARET VARA COBB, Fellow in Zoology  
JESSE LEROY CONEL, Scholar in Zoology (*Nominee of James Millikin University*)  
SIDNEY HAYES COX, Scholar in English  
EDWARD SAMUEL DOWELL, Scholar in Political Science  
WILLARD CLARKE EELLS, Research Fellow in Theoretical and Applied Mechanics (Engineering Experiment Station)  
DUANE TAYLOR ENGLIS, Scholar in Chemistry (*Nominee of Eureka College*)  
OLA MATTIE JOSEPHINE ESKELSON, Scholar in Mathematics (*Nominee of Hedding College*)  
SILAS EDGAR FAUQUEER, Scholar in Botany  
EDNA LAURA FORREY, Fellow in German  
STANLEY BLACK FRACKER, Scholar in Entomology  
DENTON LORING GEYER, Fellow in Philosophy  
JOHN WALTER GOOD, Fellow in English  
BYNE FRANCES GOODMAN, Scholar in History  
SAPPHO CECILIA GRAHAM, Scholar in German  
RUBY MABEL GRIMES, Scholar in Mathematics  
MARY ANNA HAAN, Scholar in the Classics  
HARRY FIELDING HADLEY, Research Fellow in Industrial Chemistry (Engineering Experiment Station)  
HOMER HALL, Scholar in English  
ALFRED CHESTER HANFORD, Scholar in Political Science  
EDWARD OTTO HEUSE, Fellow in Chemistry  
WILLIAM GRIFFITH HILL, Scholar in English (*Nominee of Carthage College*)  
CHARLES ELMER HOLLEY, Scholar in Education  
NELLIE NANCY HORNOR, Scholar in Physics  
HAROLD ALLEN HOUSTON, Research Fellow in Industrial Railway Engineering (Engineering Experiment Station)  
JOSEPH WHITNEY HOWARD, Scholar in Chemistry (*Nominee of Shurtleff College*)  
JOSEPH EARL HUBER, Scholar in Civil Engineering  
PAUL WESLEY IVEY, Scholar in Economics  
ELWIN VALENTINE KRATZ, Scholar in Civil Engineering (*Nominee of College of Engineering*)

- EDWARD AUGUST THEODORE KIRCHER, Fellow in Mathematics  
 PHILIP AUGUSTUS LEHENBAUER, Fellow in Botany  
 GRETCHEN KATHERINE LUTZ, Scholar in German  
 RUDOLPH McDERMET, Research Fellow in Electrical Engineering (Engineering Experiment Station)  
 JANET MALCOLM MACDONALD, Scholar in the Classics  
 WALLACE MACFARLANE, Fellow in Agronomy  
 HAROLD HOSSACK MACGREGOR, Fellow in Chemistry  
 GEORGE ALFRED MANEY, Research Fellow in Theoretical and Applied Mechanics (Engineering Experiment Station)  
 MAYNE SEGUINE MASON, Research Fellow in Electrical Engineering (Engineering Experiment Station)  
 LOUIS CLARK MATHEWSON, Fellow in Mathematics  
 J EARLL MILLER, Scholar in History  
 EDNA MOSHER, Scholar in Entomology  
 WILLIAM EARL MOSHER, Research Fellow in Mechanical Engineering (Engineering Experiment Station)  
 JONAS BERNARD NATHANSON, Scholar in Physics  
 LLOYD FRANCIS NICKELL, Fellow in Chemistry  
 FRANK GARM NORBURY, Scholar in Chemistry (*Nominee of Illinois College*)  
 RUDOLPH HANS NOTTELMANN, Scholar in History (*Nominee of Monmouth College*)  
 ALFRED WALTER ORCUTT, Fellow in Zoology  
 ARTHUR FREDERICK PEINE, Fellow in History  
 DAVID CHANDLER PRINCE, Scholar in Electrical Engineering  
 CHARLES FREDERICK CURTIS RILEY, Fellow in Zoology  
 CLARISSA RINAKER, Fellow in English  
 CORNELIA RUTH SEAWELL, Scholar in the Classics  
 ROBERT ST. CLAIR SEESE, Scholar in Electrical Engineering  
 SIBELT LUKE SIMMERING, Fellow in Mechanical Engineering  
 MARY MARGARET SPANGLER, Scholar in English  
 EDWIN ROLLIN SPENCER, Scholar in Education  
 JOHN WILLIAM STOKES, Research Fellow in Electrical Engineering (Engineering Experiment Station)  
 WILHELM ARTHUR SWENSON, Scholar in Mathematics (*Nominee of Augustana College*)  
 HOWARD RICE THOMAS, Research Fellow in Theoretical and Applied Mechanics (Engineering Experiment Station)  
 LILY BELLE VOEGELEIN, Scholar in Classics (*Nominee of Northwestern College*)  
 IRMA ELIZABETH VOIGT, Fellow in German  
 MARGARET WASHINGTON, Scholar in Entomology  
 PAUL SMITH WELCH, Fellow in Zoology  
 GUY YANDALL WILLIAMS, Fellow in Chemistry  
 WALTER JACOB WOHLBERG, Research Fellow in Mechanical Engineering (Engineering Experiment Station)  
 PHILIP QUINCY WRIGHT, Scholar in Political Science (*Nominee of Lombard College*)  
 ADOLPH EDWARD ZUCKER, Scholar in German

#### THE FRANCIS JOHN PLYM FELLOWSHIP IN ARCHITECTURE

EDWARD ROY LUDWIG, 1911

# UNIVERSITY HONORS

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1911-1912

AWARDED BY THE FACULTY OF THE UNIVERSITY FOR SCHOLARSHIP

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OTHO WILLIAM ALLEN	HOWARD HOSMER
AMY ADALINE BEACH	MARIAM KNOWLTON
NORMAN FERDINAND BRUNKOW	ELEANOR LUCILE MENCH
OLEN ROBERT CLEMENTS	CARL GARNER STEARNS
RUTH HALLIDAY	MARK ALBERT VAN DOREN

### THE DEGREE OF A.B. WITH HONORS

PAUL EVERETT BELTING, in Philosophy  
LOUISE KATHERYN GOEBEL, in German  
BYNE FRANCES GOODMAN, in History  
LOUIS HILL GOURLEY, in French  
FRANK BONNER LEONARD, in Economics  
JOSEPH ALLAN NEVINS, in English  
FLORENCE ARMINA OLSON  
ADOLF EDWARD ZUCKER, in German

## COLLEGE OF SCIENCE

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OSCAR JACOB ELSESSER	FORREST HAMILTON MURRAY
CARRIE BELLE HERDMAN	ANTON PRASIL
HERBERT LOUIS VOIGT	

### FINAL HONORS

ALICE BIESTER	FLOYD WILLIAM MOHLMAN
LOUIS EDWIN DALLENBACH	NELLE MELISSA RIETZ
NELLIE NANCY HORNER	MINNIE VAUTRIN
ARTHUR LYLE ISRAEL	

### SPECIAL HONORS

OTTO SPRINGE, in Ceramic Engineering  
FLOYD WILLIAM MOHLMAN, in Chemistry  
JOSE ORIOL CARRERO, in Chemical Engineering  
CHARLES KAY HEWES, in Chemical Engineering  
ARTHUR LYLE ISRAEL, in Chemical Engineering  
CHARLES RASCHER, in Chemical Engineering  
NELLE MELISSA RIETZ, in Zoology

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JOHN CUTLER  
ARMIN ELMENDORF  
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LINN HELANDER  
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CLOVIS WARD LINCOLN  
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ELMER MCCORMICK

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MYER OSCAR NATHAN  
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JULIUS CLARK PALMER  
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GEORGE EDWARD QUICK  
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DAVID MORRIS RIFF  
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ELWIN VALENTINE KRATZ

LIONEL LYMAN LIVINGSTONE  
PAUL KEITER MILES  
GEORGE WEST PHILLEO  
DAVID CHANDLER PRINCE  
CHESTER SCHENCK  
JOHN WILLIAM STOKES  
ARCHIBALD BEEBE VAN DEUSEN  
ROY L VANIMAN  
WALTER CHARLES VOSS  
HARVEY FRANKLIN WAGNER

## SPECIAL HONORS

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DAVID CHANDLER PRINCE, in Electrical Engineering  
JOHN WILLIAM STOKES, in Electrical Engineering  
HARVEY FRANKLIN WAGNER, in Civil Engineering

## COLLEGE OF AGRICULTURE

## PRELIMINARY HONORS

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GEORGE STANLEY BEAUMONT  
FREDERICK JACKSON BLACKBURN  
RUSSELL CARD FRAZEE  
ROBERT PERCY GAGE  
CECIL A HUGHES

WILFORD ESPIN JOHNS  
CATHERINE PLANCK  
GLENN WILSON SCHROEDER  
EDMUND CLAY SECOR  
WARREN MAXWELL SHELTON  
TOM CANDY STONE  
WALLACE MOOREHEAD WELTY

## FINAL HONORS

HAROLD CLAYTON M CASE  
GEORGIA ELIZABETH FLEMING  
ROBERT R HUDELSON

DONALD JACKSON KAYS  
GEORGE BROPHY KENDALL  
DANA HUGH STEVENSON

SCHOOL OF MUSIC

SPECIAL HONORS

ROSA-LEE GAUT

COLLEGE OF LAW

PRELIMINARY HONORS

WILLIAM EVERITT BRITTON  
IRA ALLEN DIXON

STANLEY LANDON POGUE  
NATHAN COOK SEIDENBERG

LIBRARY SCHOOL

FINAL HONORS

EMMA FELSENTHAL

# MILITARY HONORS

---

## COMMISSIONS AS BREVET CAPTAINS, ILLINOIS NATIONAL GUARD ISSUED BY THE GOVERNOR IN 1912

PAUL KIRCHER	WALTER CHARLES BERKEMEYER
HOMER BOYS HULL	EDMUND GOTTLIEB HOEPPNER
LESTER HERBERT GRAVES	LEO VINCENT SCHUNDNER
HERBERT THAL LEO	SIDNEY GRISWOLD MARTIN
LEIGH MERYL MATTHEWS	LEO MAHLON APGAR
ARTHUR WILLIAM ABBOTT	WALTER CHARLES VOSS
VICTOR ROBERT SLADEK	WILLIAM GLADSTONE CLARK
ARTHUR LYLE ISRAEL	HERMAN CHARLES KRANNERT
ROSS DARWIN INGALLS	FRED EARL SWEITZER
KENNETH BEEB	WILLIAM VERITY INGRAM
JOHN RICHARD WELLS	WILLIAM RAPHAEL MCINTIRE
ARCHIBALD BEEBE VAN DEUSEN	GLEN DAVID BAGLEY
LOUIS EDWIN DALLENBACH	

## REPORTED TO THE ADJUTANT GENERAL, UNITED STATES ARMY AS DISTINGUISHED CADETS

PAUL KIRCHER	LEIGH MERYL MATTHEWS
HOMER BOYS HULL	ARTHUR WILLIAM ABBOTT
LESTER HERBERT GRAVES	VICTOR ROBERT SLADEK
HERBERT THAL LEO	ROSS DARWIN INGALLS
ARCHIBALD BEEBE VAN DEUSEN	

## ROSTER OF OFFICERS AND NON-COMMISSIONED OFFICERS OF THE UNIVERSITY CORPS OF CADETS, 1912-13

Colonel.....	E. H. Leslie
Lieutenant Colonel.....	E. C. Hohman
Captain and Regimental Adjutant.....	L. B. Ermeling
Captain and Regimental Quartermaster..	Cleaver Thayer
Captain and Regimental Commissary.....	F. M. Atkinson
Regimental Sergeant Major.....	J. N. Greene
Regimental Quartermaster Sergeant.....	E. A. Williford
Regimental Commissary Sergeant.....	
Regimental Color Sergeant.....	F. S. Wells
Regimental Color Sergeant.....	R. R. Zipprodt

## FIRST BATTALION

Major.....	H. C. Thompson
First Lieutenant and Adjutant.....	C. H. Westcott
Second Lieutenant and Quartermaster.....	F. J. Giehler
Sergeant Major.....	L. E. Thorne



*Company "A"*  
 Captain, R. U. Nichols  
 1st Lieut., H. G. Wood  
 2nd Lieut., H. L. Bauer  
 1st Sergt., A. Burns  
 Sergeants, J. C. Hostetler  
               G. H. Dubin  
               J. B. Jefferson  
               R. E. Morris  
               E. H. Stewart  
               A. M. Baker  
 Corporals, H. C. Albin  
               C. W. Crawford  
               W. M. Fowler  
               M. B. Kugler  
               P. Meyers  
               B. Sterenberg  
               C. P. Winters

*Company "C"*  
 Captain, C. A. Wold  
 1st Lieut., H. S. Mueller  
 2nd Lieut., C. H. Thompson  
 1st Sergt., I. R. Cline  
 Sergeants, C. H. Berwald  
               E. J. Bartz  
               E. A. James  
               G. D. Stopp  
               H. N. Mottern  
               J. M. Jansen  
 Corporals, O. C. Detering  
               G. L. Kyle  
               Jos. H. Miller  
               T. D. Randall  
               D. D. Stonier  
               A. Zollinger

*Company "B"*  
 Captain, A. W. Davis  
 1st Lieut., J. C. Palmer  
 2nd Lieut., A. H. Aagaard  
 1st Sergt., S. Corley  
 Sergeants, C. H. McCauley  
               E. R. Dillavou  
               J. N. Noble  
               G. E. Sanders  
               A. D. Hawley  
               R. M. Wightman  
 Corporals, E. W. Andrews  
               C. H. Gemberling  
               W. H. Kuhn  
               W. M. Stevens  
               S. Zeller

*Company "D"*  
 Captain, P. E. Buck  
 1st Lieut., H. P. Ousley  
 2nd Lieut., J. E. Lewis  
 1st Sergt., E. H. Pool  
 Sergeants, R. D. C. Chapman  
               A. M. Barreau  
               A. J. Benner  
               F. H. Kelley  
               T. Plack  
               P. G. Schiesswohl  
 Corporals, C. H. Apple  
               C. E. Dickey  
               W. L. Golden  
               J. S. Milnes  
               C. H. Rehling  
               E. B. Stout  
               B. Wham

SECOND BATTALION

Major.....C. R. Horrell  
 First Lieutenant and Adjutant.....E. H. Berry  
 Second Lieutenant and Quartermaster.....E. M. Lurie  
 Sergeant Major.....H. K. Sheldon

*Company "A"*  
 Captain, K. C. Kirchhoff  
 1st Lieut., P. C. Rich  
 2nd Lieut., N. F. Brunkow  
 1st Sergt., L. H. Dunham  
 Sergeants, K. Carpenter  
               W. B. Erwin  
               O. A. Krueger  
               L. A. Parker  
               A. R. Siebens  
               H. E. Barden

*Company "B"*  
 Captain, L. A. Boettiger  
 1st Lieut., H. P. Vandercook  
 2nd Lieut., A. W. Baumgarten  
 1st Sergt., E. C. Elles  
 Sergeants, E. R. Brunskill  
               R. L. Rush  
               G. H. Butler  
               L. D. Knapp  
               C. E. Trowbridge  
               A. P. Peyraud

Corporals, B. Austin  
B. E. Dirks  
I. Larson  
G. B. Teno  
B. H. Stubblefield

*Company "C"*

Captain, F. X. Loeffler  
1st Lieut., N. L. Partridge  
2nd Lieut., G. Meyer  
1st Sergt., R. B. Hinman  
Sergeants, R. L. Barlow  
C. C. Bradley  
C. H. Grewe  
J. L. Kobylanski  
R. W. Parker  
A. Tarranciano  
Corporals, E. Barth  
H. Dubin  
G. Hammer  
A. C. G. Leverenz  
M. Nelson  
J. F. Romine  
H. R. Tear

Corporals, B. A. Barker  
P. R. Greenman  
P. W. Mourning  
H. A. Tanneson

*Company "D"*

Captain, M. G. Severinghaus  
1st Lieut., H. E. Codlin  
2nd Lieut., W. J. Bublitz  
1st Sergt., C. E. Koch  
Sergeants, H. Cutting  
W. O. Rathfon  
H. L. Cummings  
G. D. Griswold  
A. E. Kidd  
W. T. Reace  
Corporals, S. Duner  
A. B. Hammitt  
S. C. Linbarger  
R. E. Thomas

## THIRD BATTALION

Major.....J. F. Brown  
First Lieutenant and Adjutant.....F. A. Kopf  
Second Lieutenant and Quartermaster.....C. Velzy  
Sergeant Major.....H. J. Kircher

*Company "A"*

Captain, I. R. Ruby  
1st Lieut., E. K. Augustus  
2nd Lieut., R. A. Kane  
1st Sergt., W. K. Norris  
Sergeants, J. E. Demuth  
M. E. Slater  
W. W. Anderson  
C. C. Gamble  
G. H. Lindsey  
W. K. Parker  
J. C. C. Whitelaw  
Corporals, A. B. Bingham  
C. M. Linsley  
O. Rue  
L. D. Tilton

*Company "C"*

Captain, W. K. Palmer  
1st Lieut., E. L. Hasker  
2nd Lieut., D. M. Riff  
1st Sergt., C. A. Nebel  
Sergeants, J. L. Fish  
F. Taggart  
C. B. Carlson  
G. H. Matteson  
D. B. Rich  
J. R. Foster

*Company "B"*

Captain, M. L. Nebel  
1st Lieut., G. H. Cole  
2nd Lieut., F. H. Bergland  
1st Sergt., R. S. Mason  
Sergeants, R. Dunham  
W. E. Whisler  
R. N. Coolidge  
G. E. Gable  
E. R. P. Rall  
R. E. Helfrick  
Corporals, G. W. Blake  
I. A. Elliott  
R. L. Lundin  
E. Nolte

*Company "D"*

Captain, E. A. Glenz  
1st Lieut., H. O. Danz  
2nd Lieut., H. S. Tressel  
1st Sergt., W. A. Piper  
Sergeants, G. W. Watts  
H. F. Cogdall  
R. M. Husband  
E. S. McPherson  
C. L. Ritts  
H. L. Flodin

Corporals, E. A. Nordstedt

Corporals, W. H. Chambers  
P. H. Everhart  
W. A. Honer  
J. L. McKeown  
T. D. Shonts  
B. R. Uphaus

FOURTH BATTALION

Major.....W. J. Carmichael  
First Lieutenant and Adjutant.....H. E. Howes  
Second Lieutenant and Quartermaster.....H. Devine  
Sergeant Major.....L. A. Turnock

*Company "A"*

Captain W. O. Andrews  
1st Lieut., E. C. Prouty  
2nd Lieut., O. F. Foster  
1st Sergt., F. Ritter  
Sergeants, A. W. Gross  
C. J. Anderson  
M. Holmburger  
V. L. Morris  
D. C. Scheele  
C. P. Barkman  
Corporals, L. Clemons  
G. C. Faurote  
C. W. Hudelson  
L. D. Marquis  
B. Oswalt  
J. M. Silkman  
H. H. Walters

*Company "C"*

Captain, C. A. Schoessel  
1st Lieut., E. A. Doisey  
2nd Lieut., R. L. Smith  
1st Sergt., F. H. Thorne  
Sergeants, G. L. Ayers  
B. H. Decker  
C. A. Metz  
C. H. S. Lekberg  
W. E. Wheeler  
W. C. Armstrong  
Corporals, H. Colson  
A. K. Fogg  
S. Korshak  
G. H. Pike  
J. D. Snook  
R. T. Welsh

*Signal Company*

Captain, C. W. Gates  
1st Lieut., L. W. Faulkner  
2nd Lieut., E. R. Hatowski  
1st Sergt., W. A. Wagner

*Company "B"*

Captain, J. F. Kohout  
1st Lieut., L. W. Miner  
2nd Lieut., W. J. Blum  
1st Sergt., F. J. Strook  
Sergeants, G. M. Girhard  
W. G. Altpeter  
V. F. Dobbins  
C. F. Hood  
E. L. Seyster  
A. H. Grunewald  
Corporals, E. Cochran  
J. E. Fetherston  
C. A. Kellogg  
F. W. Mattoon  
R. Parsons

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Captain, M. P. Taylor  
1st Lieut., W. H. Scales  
2nd Lieut., W. E. Bow  
1st Sergt., H. C. Webster  
Sergeants, R. L. Herman  
S. S. Davis  
A. H. Huisken  
John H. Miller  
W. S. Shively  
V. D. Cylkowski  
Corporals, D. F. Comstock  
E. Fontaine  
C. G. Kramer  
A. M. Metzler  
F. Pinkney  
T. K. White

*Battery*

Captain, C. B. Sayre  
1st Lieut., E. R. Foster  
2nd Lieut., J. E. Churchill  
1st Sergt., H. R. Wiesenmeyer

Sergeants, W. H. Simon  
 L. C. Bow  
 H. W. Deakman  
 R. C. Swope  
 i. Faulkner  
 C. T. Pennebaker  
 Corporals, H. E. Austin  
 A. D. Donnell  
 W. Ramsey  
 A. L. Wagner  
 J. A. Andrews  
 T. A. Ross  
 H. B. Rogers

Sergeants, H. Bigler  
 F. A. Forty  
 A. M. Heinzelman  
 C. E. Sims  
 M. E. Hoit  
 W. F. Anderson

## ANNUAL COMPETITIVE DRILLS—1912

Winner University Gold Medal.....Cadet Private H. O. Danz  
 Winner Hazelton Gold Medal.....Cadet Private H. K. Sheldon

## INFANTRY

*University Bronze Medals*

## (Sophomore Competitive Drill)

## COMPANY "C" 1ST BATTALION, UNIVERSITY REGIMENT

Captain J. R. Wells  
 1st Lieut. P. E. Buck  
 2nd Lieut. C. A. Wold  
 1st Sergt. J. W. Herndon  
 Sergeant B. H. Blake  
 Sergeant J. Cutler  
 Sergeant V. O. Seed  
 Sergeant A. F. Barron  
 Sergeant O. F. Foster  
 Sergeant S. T. Claflin  
 Corporal E. A. Brown  
 Corporal F. R. Fleig  
 Corporal A. N. Laird  
 Corporal B. J. Rappaport  
 Corporal J. L. Simonich  
 Corporal G. H. Wittenberg  
 Lance Corporal J. M. Nickelsen  
 Lance Corporal G. G. Sears  
 Private B. Abney  
 Private G. F. Bissell  
 Private J. M. Bowen  
 Private C. H. Brant  
 Private T. C. Burwash  
 Private M. B. Carr  
 Private R. F. Clark  
 Private G. D. Crittenberger  
 Private H. O. Danz

Private F. L. Dunavan  
 Private R. N. Engle  
 Private P. H. Goldberg  
 Private S. B. Hadden  
 Private H. H. Harris  
 Private W. S. Hatch  
 Private A. S. Henderson  
 Private W. H. Jacobson  
 Private W. S. Kirkpatrick  
 Private H. O. McCracken  
 Private E. E. Mitchell  
 Private M. J. Morrissey  
 Private W. P. Munsell  
 Private M. Murr  
 Private C. H. Peret  
 Private J. H. Phillips  
 Private F. E. Poston  
 Private R. C. Quirk  
 Private R. S. Reed  
 Private R. E. Risser  
 Private A. L. Schuyler  
 Private C. H. Tapping  
 Private H. E. Thompson  
 Private M. Y. T. Tong  
 Private H. L. Voigt  
 Private G. I. Willson  
 Private H. T. Wood

## *\*University Bronze Medals and Pins*

(Freshman Competitive Drill)

### COMPANY "B" 3RD BATTALION, UNIVERSITY REGIMENT

Captain W. C. Voss	Private A. W. Gross
1st Lieut. M. L. Nebel	Private J. H. Gumz
2nd Lieut. E. R. Coolidge	Private H. W. Heafer
1st Sergt. G. H. Bargh	Private R. M. Husband
Sergeant P. C. Rich	Private L. A. Husted
Sergeant R. W. Owens	Private J. R. Jones
Sergeant H. G. Wood	Private W. J. Keese
Sergeant G. V. Carrier	Private S. Korshak
Sergeant D. D. Tibbetts	Private C. G. Kramer
Sergeant C. Velzy	Private C. L. Langan
Corporal R. L. Smart	Private G. H. Lindsey
Corporal G. E. Quick	Private R. C. Maley
Corporal J. H. Robert	Private S. H. Minchin
Corporal T. J. Rector	Private V. L. Morris
Corporal J. E. McDonald	Private P. L. Myers
Corporal H. F. Skadden	Private C. A. Nebel
Lance Corporal P. G. Rapp	Private L. A. Parker
Lance Corporal T. Plack	Private A. W. Peterson
Private R. Ashwill	Private C. P. Pfrangle
Private R. E. Augustus	Private F. B. Richardson
Private R. P. Baker	Private F. P. Rohrer
Private R. L. Barlow	Private E. Sandstedt
Private R. O. Barnes	Private W. S. Shively
Private E. M. Barnum	Private A. D. Sizer
Private W. D. Boyer	Private M. Stein
Private E. T. Buckley	Private H. Steinmeyer
Private W. J. Callahan	Private R. L. Strang
Private A. W. Carlson	Private A. R. Summers
Private C. B. Carlson	Private L. F. Swartz
Private G. H. Dubin	Private C. E. Trowbridge
Private F. A. DuHadway	Private R. H. Van Buskirk
Private E. C. Elles	Private J. B. Wainwright
Private R. Garner	Private B. L. Wheeler
Private H. Geitner	Private R. M. Wightman
Private L. M. Gilmore	Private C. P. Winters
Private R. M. Graves	Private P. R. Zipprodt

## ARTILLERY

### *University Bronze Medals*

Captain E. A. Rich	Private F. E. Britton
1st Lieut. C. B. Sayre	Private O. A. Budina
2nd Lieut. J. J. Kurt	Private A. Bergman
Sergeant E. R. Foster	Private O. R. Clements
Private C. A. Atwood	Private H. G. Menke
	Private O. A. Shoger

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\*Sophomores, bronze medals; Freshmen, bronze pins

## SIGNAL COMPANY

*University Bronze Medals*

Captain G. D. Bagley	Private D. S. Frayer
1st Lieut. C. W. Gates	Private C. L. Luckett
2nd Lieut. L. A. Dole	Private E. R. Hatowski
Corporal F. J. Flexer	Private A. C. Pratt
Corporal J. H. Measer	Private V. S. Rice
Private H. E. Austin	Private E. M. Shaw
Private H. W. Deakman	Private R. C. Swope
	Private G. A. Ziska

## RIFLE COMPETITION

*University Bronze Medals*

## COMPANY "B" 1ST BATTALION TEAM

Sergeant A. W. Baumgarten	Private G. Christy
Corporal C. S. Craigmile	Private L. K. Gilpatrick
Private L. A. Abbott	Private D. O. Mount

# INTERCOLLEGIATE DEBATERS

1911-1912

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## IN THE CENTRAL DEBATING CIRCUIT

### *Against Wisconsin*

CLYDE MONROE HOBART  
WILLIAM JASPER PRINCE  
FRANK BONNER LEONARD, JR.

### *Against Iowa*

RAYMOND GEORGE REAL  
LESTER EUGENE FRAILEY  
ARTHUR VERNON ESSINGTON

## IN THE STATE UNIVERSITY DEBATING LEAGUE

### *Against Ohio State*

CHARLES WILLIAM BURTON  
LESTER EUGENE FRAILEY  
FRANK BONNER LEONARD, JR.

### *Against Indiana*

LYMAN MARION FORT  
CHARLES MARSHALL KENNAN  
JAMES VAIL STEVENSON

## REPRESENTATIVE IN THE STATE PEACE CONTEST

ARTHUR EVERETT HOLCH

## REPRESENTATIVE IN THE NORTHERN ORATORICAL LEAGUE

JAMES VAIL STEVENSON

# SUMMARY OF DEGREES

1912

## *Honorary Degrees*

LL.D.....	2
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## *Degrees in the Graduate School*

A.M.....	46
M.S.....	39
C.E.....	3
E.E.....	1
M.E.....	4
Ph.D.....	20
Total.....	113

## *Baccalaureate Degrees*

A.B., College of Literature and Arts.....	164
A.B., College of Science.....	44
B.S., College of Science.....	20
B.S., College of Engineering.....	195
B.S., College of Agriculture.....	68
B.Mus., School of Music.....	2
Total.....	493

## *Degrees in Law*

LL.B.....	25
J.D.....	1
Total.....	26

## *Degrees in Library Science*

B.L.S.....	12
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TOTALS, COLLEGES AND SCHOOLS IN URBANA.....	644
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## *Degrees in Medicine*

M.D.....	145
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## *Degrees in Dentistry*

D.D.S.....	36
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## *Degrees in Pharmacy*

Ph.G.....	34
Ph.C.....	3

Total.....	37
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TOTAL, DEPARTMENTS IN CHICAGO.....	218
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TOTAL, ALL DEPARTMENTS.....	864
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# SUMMARY OF OFFICERS

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OFFICERS OF INSTRUCTION	<i>Men</i>	<i>Women</i>	<i>Total</i>
Professors .....	71	2	73
Associate Professors.....	10	..	10
Assistant Professors.....	61	2	63
Associates .....	37	2	39
Instructors .....	101	16	117
Assistants .....	84	18	102
Special Lecturers .....	1	1	2
Graduate Assistants.....	23	4	27
Student Assistants.....	10	2	12
Student Assistants in Military.....	5	..	5
Total .....	403	47	450
OFFICERS OF ADMINISTRATION.....	36	3	39
TOTAL INSTRUCTIONAL AND ADMINISTRATIVE...	439	50	489
Deduct duplicates.....	22	2	24
NET TOTAL.....	417	48	465

# SUMMARY OF STUDENTS

College and Course	Seniors			Juniors			Sophomores		
	Men	Wom.	T'l.	Men	Wom.	T'l.	Men	Wom.	T'l.
LITERATURE AND ARTS									
General L. and A.....	24	68	92	37	66	103	31	75	106
Business .....	33	....	33	40	2	42	45	....	45
Household Science.....	....	5	5	....	32	32	....	22	22
Totals.....	57	73	130	77	100	177	76	97	173
SCIENCE									
General Science.....	38	6	44	22	9	31	15	7	22
Ceramics .....	5	....	5	9	....	9	9	....	9
Ceramic Engineering.....	4	....	4	3	....	3	8	....	8
Chemistry .....	8	....	8	6	....	6	5	....	5
Chemical Engineering...	13	....	13	8	....	8	19	....	19
Medical Preparatory.....	3	....	3	7	....	7	12	....	12
Household Science.....	....	11	11	....	9	9	....	6	6
Totals .....	71	17	88	55	18	73	68	13	81
TOTALS ARTS AND SCIENCE	128	90	218	132	118	250	144	110	254
ENGINEERING									
Architecture .....	22	....	22	43	....	43	38	....	38
Architectural Engin'r'g	18	....	18	17	....	17	27	....	27
Civil Engineering.....	32	....	32	47	....	47	56	....	56
Electrical Engineering..	22	....	22	80	....	80	53	....	53
Mechanical Engineering	18	....	18	54	....	54	49	....	49
Mining Engineering.....	3	....	3	5	....	5	8	....	8
Mun. & San. Engin.....	3	....	3	9	....	9	4	....	4
Railway Civil Engin.....	2	....	2	2	....	2	2	....	2
Railway Electr. Engin..	1	....	1	....	....	....	1	....	1
Railway Mech. Engin....	2	....	2	2	....	2	1	....	1
Totals .....	123	....	123	259	....	259	240	....	240
AGRICULTURE									
General Agriculture.....	91	1	92	115	1	116	137	....	137
Household Science.....	....	9	9	....	20	20	....	20	20
Totals .....	91	10	101	115	21	136	137	20	157
MUSIC .....	2	3	5	....	7	7	1	6	7
TOTALS, UNDERGRADUATES AT URBANA.....									
				Third Year			Second Year		
LAW .....				29	....	29	27	....	27
LIBRARY SCHOOL.....							....	16	16
TOTALS, UNDERGRADUATE AND PROFESSIONAL SCHOOLS AT URBANA.....									
GRADUATE SCHOOL.....									
SUMMER SESSION (1912)									
TOTAL REGISTRATION.....									
Deduct students returned.....									
Net total, Summer Session.....									
TOTALS AT URBANA.....									
PHARMACY (Chicago)									
Ph.G. Course.....							54	....	54
Ph.C. Course.....							3	....	3
Total .....							57	....	57
TOTAL IN UNIVERSITY TO FEBRUARY 15, 1913.....									
Deduct Duplicates.....									
NET TOTAL.....									

# 1912-1913

<i>Freshmen</i>			<i>Specials</i>			<i>Totals</i>		
<i>Men</i>	<i>Wom.</i>	<i>T'l.</i>	<i>Men</i>	<i>Wom.</i>	<i>T'l.</i>	<i>Men</i>	<i>Women</i>	<i>Total</i>
199	121	240	4	13	17	215	343	558
127	2	129	....	1	1	245	5	250
....	55	55	....	1	1	....	115	115
246	178	424	4	15	19	460	463	923
48	7	55	2	....	2	125	29	154
23	....	23	....	....	....	46	....	46
15	....	15	....	....	....	30	....	30
22	1	23	....	....	....	41	1	42
28	....	28	1	....	1	69	....	69
36	....	36	....	....	....	58	....	58
....	18	18	....	1	1	....	45	45
172	26	198	3	1	4	369	75	444
418	204	622	7	16	23	829	538	1367
96	1	97	3	....	3	202	1	203
67	....	67	....	....	....	129	....	129
78	....	78	3	....	3	216	....	216
121	....	121	3	....	3	279	....	279
138	....	138	1	....	1	260	....	260
8	....	8	....	....	....	24	....	24
7	....	7	1	....	1	24	....	24
2	....	2	....	....	....	8	....	8
2	....	2	....	....	....	5	....	5
1	....	1	1	....	1	7	....	7
520	1	521	12	....	12	1154	1	1155
271	1	272	149	10	159	763	13	776
....	42	42	....	5	5	....	96	96
271	43	314	149	15	164	763	109	872
1	35	36	....	31	31	4	82	86
						2750	730	3480
<i>First Year</i>								
61	....	61	8	....	8	125	....	125
2	17	19	....	....	....	2	33	35
						2877	763	3640
						269	62	331
						430	210	640
						222	51	273
						208	159	367
						3354	984	4338
63	3	66	47	....	47	164	3	167
5	....	5	1	....	1	9	....	9
68	3	71	48	....	48	173	3	176
						3527	987	4514
						4	4	8
						3523	983	4506

# GEOGRAPHICAL DISTRIBUTION

## STUDENTS AT URBANA 1912-1913

BY COUNTRIES, STATES, COUNTIES IN ILLINOIS, AND SENATORIAL DISTRICTS  
IN ILLINOIS

### SUMMARY

	<i>Men</i>	<i>Women</i>	<i>Total</i>
Foreign Countries.....	120	1	121
Insular Possessions of U. S.....	8	1	9
States other than Illinois.....	674	158	832
Total outside Illinois.....	802	160	962
Illinois .....	2548	820	3368
Total .....	3350	980	4330

### FOREIGN COUNTRIES

Argentina .....	3	....	3
Bohemia .....	1	....	1
Bulgaria .....	1	....	1
Brazil .....	2	....	2
Canada .....	9	1	10
China .....	44	....	44
Cuba .....	2	....	2
Denmark .....	1	....	1
Egypt .....	1	....	1
Germany .....	4	....	4
Holland .....	1	....	1
India .....	9	....	9
Italy .....	1	....	1
Japan .....	15	....	15
Mexico .....	10	....	10
Norway .....	2	....	2
Orange Free State.....	1	....	1
Peru .....	2	....	2
Russia .....	6	....	6
South Africa.....	2	....	2
Sweden .....	1	....	1
Switzerland .....	1	....	1
Turkey .....	1	....	1
Total, Foreign Countries.....	120	1	121

### INSULAR POSSESSIONS

Hawaii .....	2	1	3
Philippine Islands.....	4	....	4
Porto Rico.....	2	....	2
Total, Insular Possessions.....	8	1	9

### STATES

Alabama .....	4	1	5
Arizona .....	4	....	4
Arkansas .....	9	2	11
California .....	16	4	20
Colorado .....	12	5	17
Connecticut .....	1	1	2
Delaware .....	....	....	....
District of Columbia .....	4	....	4
Florida .....	1	2	3

# Geographical Distribution

551

	<i>Men</i>	<i>Women</i>	<i>Total</i>
Georgia .....	2	....	2
Idaho .....	5	....	5
Indiana .....	145	36	181
Iowa .....	66	19	85
Kansas .....	25	8	33
Kentucky .....	10	....	10
Louisiana .....	2	1	3
Maine .....	1	....	1
Maryland .....	2	....	2
Massachusetts .....	20	2	22
Michigan .....	38	11	49
Minnesota .....	22	5	27
Mississippi .....	4	1	5
Missouri .....	81	9	90
Montana .....	2	....	2
Nebraska .....	11	3	14
Nevada .....	1	....	1
New Hampshire.....	1	1	2
New Jersey.....	7	1	8
New Mexico.....	1	2	3
New York.....	33	8	41
North Carolina .....	....	....	....
North Dakota.....	9	1	10
Ohio .....	34	11	45
Oklahoma .....	13	4	17
Oregon .....	2	....	2
Pennsylvania .....	11	3	14
Rhode Island.....	1	....	1
South Carolina.....	1	....	1
South Dakota.....	6	1	7
Tennessee .....	5	1	6
Texas .....	10	3	13
Utah .....	3	1	4
Vermont .....	2	....	2
Virginia .....	1	2	3
Washington .....	10	3	13
West Virginia .....	4	1	5
Wisconsin .....	30	5	35
Wyoming .....	2	....	2
Total, States.....	674	158	832

## COUNTIES IN ILLINOIS

Adams .....	32	12	44
Alexander .....	7	4	11
Bond .....	5	4	9
Boone .....	11	6	17
Brown .....	6	4	10
Bureau .....	33	6	39
Calhoun .....	....	....	....
Carroll .....	9	2	11
Cass .....	8	3	11
Champaign .....	341	264	605
Christian .....	22	3	25
Clark .....	8	4	12
Clay .....	6	2	8
Clinton .....	3	3	6
Coles .....	20	7	27
Cook .....	557	111	668
Crawford .....	20	1	21
Cumberland .....	6	2	8
DeKalb .....	27	5	32
DeWitt .....	15	7	22

	Men	Women	Total
Douglas .....	14	7	21
DuPage .....	24	3	27
Edgar .....	25	7	32
Edwards .....	3	2	5
Effingham .....	7	3	10
Fayette .....	14	3	17
Ford .....	14	5	19
Franklin .....	5	1	6
Fulton .....	40	8	48
Gallatin .....	4	....	4
Greene .....	23	3	26
Grundy .....	19	4	23
Hamilton .....	....	....	....
Hancock .....	20	4	24
Hardin .....	....	....	....
Henderson .....	2	....	2
Henry .....	26	3	29
Iroquois .....	30	11	41
Jackson .....	14	4	18
Jasper .....	6	2	8
Jefferson .....	13	5	18
Jersey .....	4	....	4
Jo Daviess .....	7	3	10
Johnson .....	6	2	8
Kane .....	86	14	100
Kankakee .....	21	5	26
Kendall .....	7	2	9
Knox .....	23	8	31
Lake .....	18	2	20
LaSalle .....	66	13	79
Lawrence .....	9	2	11
Lee .....	18	6	24
Livingston .....	19	8	27
Logan .....	10	6	16
McDonough .....	21	10	31
McHenry .....	17	5	22
McLean .....	39	14	53
Macon .....	32	6	38
Macoupin .....	19	3	22
Madison .....	29	6	35
Marion .....	21	6	27
Marshall .....	8	1	9
Mason .....	8	4	12
Massac .....	7	....	7
Menard .....	4	2	6
Mercer .....	6	3	9
Monroe .....	4	1	5
Montgomery .....	28	6	34
Morgan .....	12	2	14
Moultrie .....	20	4	24
Ogle .....	15	2	17
Peoria .....	57	5	62
Perry .....	3	....	3
Piatt .....	17	8	25
Pike .....	14	3	17
Pope .....	1	....	1
Pulaski .....	2	1	3
Putnam .....	11	1	12
Randolph .....	3	5	8
Richland .....	7	2	9
Rock Island .....	29	11	40
St. Clair .....	33	5	38
Saline .....	6	3	9
Sangamon .....	50	13	63

	Men	Women	Total
Schuyler .....	9	2	11
Scott .....	7	2	9
Shelby .....	11	3	14
Stark .....	5	3	8
Stephenson .....	15	4	19
Tazewell .....	25	10	35
Union .....	10	1	11
Vermilion .....	52	20	72
Wabash .....	6	2	8
Warren .....	14	2	16
Washington .....	4	2	6
Wayne .....	14	3	17
White .....	8	3	11
Whiteside .....	34	7	41
Will .....	24	11	35
Williamson .....	13	4	17
Winnebago .....	34	5	39
Woodford .....	7	8	15
Total, Counties .....	2548	820	3368

## SENATORIAL DISTRICTS IN ILLINOIS

District	Counties	Men	Women	Total
	Cook, 1, 2, 3, 4, 5, 6, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31.....	557	111	668
8	Boone, McHenry, Lake.....	46	13	59
10	Winnebago, Ogle.....	49	7	56
12	Jo Daviess, Stephenson, Carroll.....	31	9	40
14	Kane, Kendall.....	93	16	109
16	Putnam, Marshall, Woodford, Livingston	45	18	63
18	Peoria .....	57	5	62
20	Grundy, Kankakee, Iroquois.....	70	20	90
22	Vermilion, Edgar.....	77	27	104
24	Champaign, Piatt, Moultrie.....	378	276	654
26	McLean, Ford.....	53	19	72
28	Logan, DeWitt, Macon.....	57	19	76
30	Schuyler, Cass, Mason, Brown, Menard, Tazewell .....	60	25	85
32	Hancock, McDonough, Warren.....	55	16	71
33	Henderson, Mercer, Rock Island.....	37	14	51
34	Douglas, Coles, Clark.....	42	18	60
35	Whiteside, Lee, DeKalb.....	79	18	97
36	Adams, Pike, Scott, Calhoun.....	53	17	70
37	Henry, Bureau, Stark.....	64	12	76
38	Greene, Jersey, Macoupin, Montgomery....	74	12	86
39	LaSalle .....	66	13	79
40	Christian, Shelby, Cumberland, Fayette....	53	11	64
41	DuPage, Will.....	48	14	62
42	Clinton, Clay, Marion, Effingham.....	37	14	51
43	Knox, Fulton .....	63	16	79
44	Monroe, Randolph, Perry, Washington, Jackson .....	28	12	40
45	Morgan, Sangamon.....	62	15	77
46	Jefferson, Wayne, Richland, Jasper.....	40	12	52
47	Madison, Bond.....	34	10	44
48	Hardin, Gallatin, White, Edwards, Wa- bash, Lawrence, Crawford.....	50	10	60
49	St. Clair.....	33	5	38
50	Alexander, Pulaski, Union, Williamson, Franklin .....	37	11	48
51	Johnson, Massac, Pope, Saline, Hamilton	20	5	25
Totals .....		2548	820	3368

# DIRECTORY OF ALUMNI ASSOCIATIONS

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## GENERAL ALUMNI ASSOCIATION

President: Peter Junkersfeld, 139 N. Prairie ave., Austin Sta., Chicago, Ill.  
Sec'y-Treasurer: Franklin W. Scott, 1209 W. Springfield ave., Urbana, Ill.

## DEPARTMENTAL ALUMNI ASSOCIATIONS

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Pres.: Blanche Seeley, Pillsbury Branch, Minneapolis Public Library, Minneapolis, Minn.  
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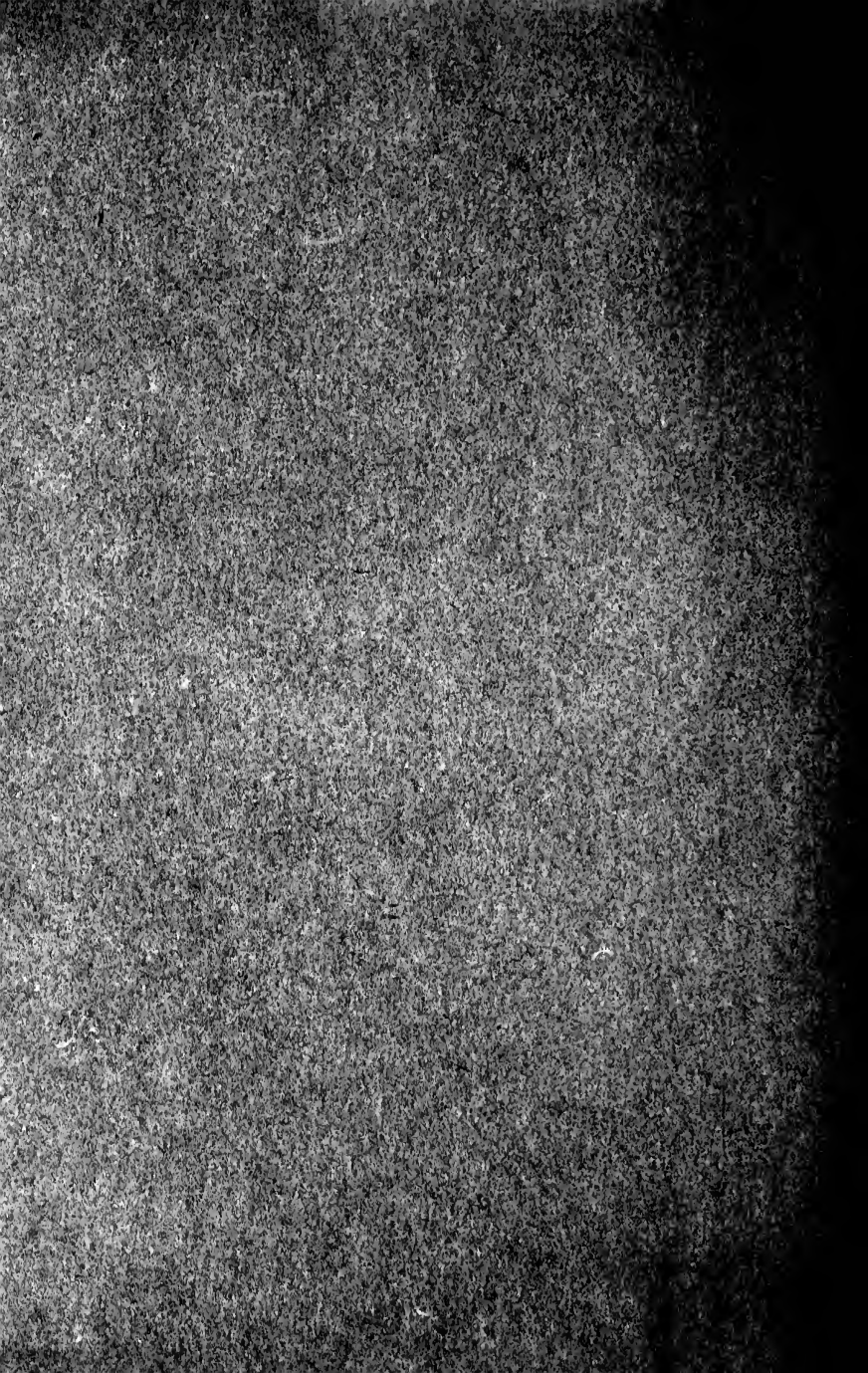
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